

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 4

IN THE MATTER OF:

Armstrong World Industries Superfund Site,
Operable Unit 2
Macon, Macon-Bibb County, Georgia

Respondents Listed in Appendix C

ADMINISTRATIVE SETTLEMENT
AGREEMENT AND ORDER ON
CONSENT FOR REMEDIAL
INVESTIGATION/ FEASIBILITY STUDY

U.S. EPA Region 4
Docket No. CERCLA-04-2018-3759

Proceeding Under Sections 104, 107, and
122 of the Comprehensive Environmental
Response, Compensation, and Liability Act,
as amended, 42 U.S.C. §§ 9604, 9607, and
9622.



11115712

TABLE OF CONTENTS

I.	JURISDICTION AND GENERAL PROVISIONS.....	1
II.	PARTIES BOUND	2
III.	STATEMENT OF PURPOSE	2
IV.	DEFINITIONS	3
V.	FINDINGS OF FACT	6
VI.	CONCLUSIONS OF LAW AND DETERMINATIONS	8
VII.	SETTLEMENT AGREEMENT AND ORDER	9
VIII.	DESIGNATION OF CONTRACTORS AND PROJECT COORDINATORS.....	10
IX.	WORK TO BE PERFORMED	11
X.	EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS	18
XI.	QUALITY ASSURANCE, SAMPLING, AND ACCESS TO INFORMATION	20
XII.	SITE ACCESS AND INSTITUTIONAL CONTROLS	22
XIII.	COMPLIANCE WITH OTHER LAWS	23
XIV.	RETENTION OF RECORDS	23
XV.	DISPUTE RESOLUTION	24
XVI.	STIPULATED PENALTIES	24
XVII.	FORCE MAJEURE	27
XVIII.	PAYMENT OF RESPONSE COSTS	28
XIX.	COVENANT NOT TO SUE BY EPA	32
XX.	RESERVATIONS OF RIGHTS BY EPA.....	32
XXI.	COVENANT NOT TO SUE BY RESPONDENTS AND SETTLING FEDERAL AGENCY	34
XXII.	OTHER CLAIMS	35
XXIII.	EFFECT OF SETTLEMENT/CONTRIBUTION	35
XXIV.	INDEMNIFICATION	37
XXV.	INSURANCE	38
XXVI.	FINANCIAL ASSURANCE	39
XXVII.	INTEGRATION/APPENDICES	40
XXVIII.	PUBLIC COMMENT.....	41
XXIX.	ADMINISTRATIVE RECORD	41
XXX.	ATTORNEY GENERAL APPROVAL.....	41
XXXI.	EFFECTIVE DATE AND SUBSEQUENT MODIFICATION	41
XXXII.	NOTICE OF COMPLETION OF WORK	42
Appendix A	Statement of Work	
Appendix B	Site Map	
Appendix C	List of Respondents	

**ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR
REMEDIAL INVESTIGATION/FEASIBILITY STUDY**

ARMSTRONG WORLD INDUSTRIES SUPERFUND SITE, OPERABLE UNIT 2

I. JURISDICTION AND GENERAL PROVISIONS

1. This Administrative Settlement Agreement and Order on Consent ("Settlement Agreement") is entered into voluntarily by the United States Environmental Protection Agency ("EPA"), the parties listed in Appendix C ("Respondents"), and the Settling Federal Agency. The Settlement Agreement concerns the preparation and performance of a remedial investigation and feasibility study ("RI/FS") for Operable Unit 2 at the Armstrong World Industries Superfund Site located in Macon, Macon-Bibb County, Georgia ("Site"). The Settlement Agreement includes reimbursement for Future Response Costs incurred by EPA in connection with the RI/FS, as well as Past Response Costs.

2. This Settlement Agreement is issued under the authority vested in the President of the United States by Sections 104, 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9604, 9607 and 9622 ("CERCLA"). This authority was delegated to the Administrator of EPA on January 23, 1987, by Executive Order 12580, 52 Fed. Reg. 2926 (Jan. 29, 1987), and further delegated to Regional Administrators on May 11, 1994, by EPA Delegation Nos. 14-14-C and 14-14-D. The authority to enter into the Settlement Agreement for the preparation and performance of the RI/FS was further redelegated by the Regional Administrator of EPA Region 4 through the Director of the Superfund Division, through the Deputy Director of the Superfund Division to the Chief of the Superfund Remedial Branch, by EPA Regional Delegation No. 14-14-C (July 8, 2010).

3. In accordance with Sections 104(b)(2) and 122(j)(1) of CERCLA, 42 U.S.C. §§ 9604(b)(2) and 9622(j)(1), EPA notified the U.S. Department of the Interior, the National Oceanic and Atmospheric Administration, and the Georgia Department of Natural Resources on August 9, 2016, of negotiations with potentially responsible parties regarding the release of hazardous substances at the Site that may have resulted in injury to the natural resources under Federal and/or State trusteeship.

4. EPA, Respondents, and Settling Federal Agency recognize that this Settlement Agreement has been negotiated in good faith and that the actions undertaken by Respondents, and the payments made on behalf of Settling Federal Agency, in accordance with this Settlement Agreement do not constitute an admission of any liability. Respondents and Settling Federal Agency do not admit, and retain the right to controvert in any subsequent proceedings other than

proceedings to implement or enforce this Settlement Agreement, the validity of the findings of fact and the conclusions of law and determinations in Sections V and VI of this Settlement Agreement. Respondents and Settling Federal Agency agree to comply with and be bound by the terms of this Settlement Agreement and further agree that they will not contest the basis or validity of this Settlement Agreement or its terms.

II. PARTIES BOUND

5. This Settlement Agreement applies to and is binding upon EPA, Respondents, Settling Federal Agency, and their heirs, successors, and assigns. Any change in ownership or corporate status of a Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter such Respondent's responsibilities under this Settlement Agreement.

6. Respondents are jointly and severally liable for carrying out all activities required by this Settlement Agreement. In the event of the insolvency or other failure of any one or more Respondents to implement the requirements of this Settlement Agreement, the remaining Respondents shall complete all such requirements.

7. Respondents shall ensure that their contractors, subcontractors, and representatives receive a copy of this Settlement Agreement and comply with this Settlement Agreement. Respondents and Settling Federal Agency shall be responsible for any noncompliance with their respective obligations under this Settlement Agreement.

8. Each undersigned representative of Respondents and Settling Federal Agency certifies that he or she is fully authorized to enter into the terms and conditions of this Settlement Agreement and to execute and legally bind Respondents and Settling Federal Agency to this Settlement Agreement.

III. STATEMENT OF PURPOSE

9. In entering into this Settlement Agreement, the objectives of EPA, Respondents, and Settling Federal Agency are: (a) to further determine the nature and extent of contamination and any threat to the public health, welfare, or the environment caused by the release or threatened release of hazardous substances, pollutants or contaminants at or from the Site, by conducting a Remedial Investigation building upon the existing work already performed at the Site, as more specifically set forth in the Statement of Work ("SOW") attached as Appendix A to this Settlement Agreement; (b) to identify and evaluate remedial alternatives to prevent, mitigate or otherwise respond to or remedy any release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site, by conducting a Feasibility Study as more specifically set forth in the SOW in Appendix A to this Settlement Agreement; and (c) to recover response and oversight costs incurred by EPA with respect to this Settlement Agreement, as well as Past Response Costs.

10. The Work conducted by Respondents under this Settlement Agreement is subject to approval by EPA and shall provide all appropriate and necessary information to assess Site conditions and evaluate alternatives to the extent necessary to select a remedy that will be

consistent with CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300 ("NCP"). Respondents shall conduct all Work under this Settlement Agreement in compliance with CERCLA, the NCP, and all applicable EPA guidance, policies, and procedures.

IV. DEFINITIONS

11. Unless otherwise expressly provided herein, terms used in this Settlement Agreement that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Settlement Agreement or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

a. "Armstrong World Industries Site, Operable Unit 2, Superfund Special Account" shall mean the special account, within the EPA Hazardous Substance Superfund, established for the Site by EPA pursuant to Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3).

b. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, *et seq.*

c. "Day" shall mean a calendar day. In computing any period of time under this Settlement Agreement, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next working day.

d. "Effective Date" shall mean the effective date of this Settlement Agreement as provided in Section XXXI.

e. "EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

f. "Engineering Controls" shall mean constructed containment barriers or systems that control one or more of the following: downward migration, infiltration or seepage of surface runoff or rain; or natural leaching migration of contaminants through the subsurface over time. Examples include caps, engineered bottom barriers, immobilization processes, and vertical barriers.

g. "Future Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States (not including Settling Federal Agency) incurs after the Effective Date in reviewing or developing plans, reports, and other deliverables submitted pursuant to this Settlement Agreement, in overseeing implementation of the Work, or otherwise implementing, overseeing, or enforcing this Settlement Agreement, including but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, the costs incurred pursuant to Section XII (Access and Institutional Controls) (including, but not limited to, the cost of attorney time and any monies paid to secure access, including, but not limited to, the amount of just compensation), Paragraph 51 (Emergency Response), Paragraph 96 (Work Takeover), Paragraph 45.g (Community Involvement) (including, but not limited to, the costs of any technical assistance grant under Section 117(e) of CERCLA, 42 U.S.C. § 9617(e)), and the costs

incurred by the United States (not including Settling Federal Agency) in enforcing the terms of this Settlement Agreement, including all costs incurred in connection with Section XV (Dispute Resolution), and all litigation costs. Future Response Costs shall also include Agency for Toxic Substances and Disease Registry costs regarding the Site, all Interim Response Costs, and all Interest on those Past Response Costs Respondents and the United States on behalf of Settling Federal Agency have agreed to pay under this Settlement Agreement that has accrued pursuant to 42 U.S.C. § 9607(a) from June 2, 2017, to the Effective Date.

h. "Georgia Department of Natural Resources" shall include any successor departments or agencies of the State of Georgia.

i. "Institutional controls" shall mean non-engineered instruments, such as administrative and/or legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a remedy by limiting land and/or resource use. Examples of institutional controls include easements and covenants, zoning restrictions, special building permit requirements, and well drilling prohibitions.

j. "Interest" shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year.

k. "Interim Response Costs" shall mean all costs, including but not limited to direct and indirect costs, (a) paid by the United States (not including Settling Federal Agency) in connection with the Site from June 2, 2017, through the Effective Date, or (b) incurred prior to the Effective Date, but paid after that date.

l. "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

m. "Paragraph" shall mean a portion of this Settlement Agreement identified by an Arabic numeral or an upper or lowercase letter.

n. "Parties" shall mean EPA, Respondents, and Settling Federal Agency.

o. "Past Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States paid at or in connection with the Site through June 1, 2017, plus Interest on all such costs which has accrued pursuant to 42 U.S.C. § 9607(a) through such date.

p. "RCRA" shall mean the Resource Conservation and Recovery Act, also known as the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901, *et seq.*

q. "Respondents" shall mean those Parties identified in Appendix C.

r. "Section" shall mean a portion of this Settlement Agreement identified by a Roman numeral.

s. "Settlement Agreement" shall mean this Administrative Settlement Agreement and Order on Consent, the Statement of Work, all appendices attached hereto (listed in Section XXVII) and all documents incorporated by reference into this document including without limitation EPA-approved submissions. EPA-approved submissions (other than progress reports) created by Respondents following entry of this Settlement Agreement are incorporated into and become a part of the Settlement Agreement upon approval by EPA. In the event of conflict between this Settlement Agreement and any appendix or other incorporated documents, this Settlement Agreement shall control.

t. "Settling Federal Agency" shall mean the United States Department of Defense ("DoD") as described in 10 U.S.C. 111, and its successor departments, agencies, or instrumentalities.

u. "Site," for the purposes of this Settlement Agreement only, shall mean the Armstrong World Industries Superfund Site, Operable Unit 2, located in Macon, Macon-Bibb County, Georgia, as depicted generally on the map attached as Appendix B. The term "Site" includes but is not limited to the "remote landfill" which occupies approximately 5 acres on the southern portion of Armstrong World Industries' property located at 4520 Guy Paine Road. It also includes the "former Macon Naval Ordnance Plant landfill" which is adjacent to and contiguous with the "remote landfill" and occupies approximately 15 acres on Macon Water Authority property. Additionally, it includes the drainage ditches to and from these landfills, and the affected sediments and biota in and around Rocky Creek. It also includes any areas to which contamination has spread from the above source areas.

v. "State" shall mean the State of Georgia.

w. "Statement of Work" or "SOW" shall mean the Statement of Work for development of an RI/FS for the Site, as set forth in Appendix A to this Settlement Agreement. The Statement of Work is incorporated into this Settlement Agreement and is an enforceable part of this Settlement Agreement as are any modifications made thereto in accordance with this Settlement Agreement.

x. "United States" shall mean the United States of America and each department, agency, and instrumentality of the United States, including the EPA and the Settling Federal Agency.

y. "Waste Material" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any "pollutant or contaminant" under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); and (3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27).

z. "Work" shall mean all activities Respondents are required to perform under this Settlement Agreement, except those required by Section XIV (Retention of Records).

V. FINDINGS OF FACT

12. The Site is located in an industrial area in Macon, Macon-Bibb County, Georgia, and includes but is not limited to an area referred to as the "remote landfill" which occupies approximately 5 acres on the southern portion of Armstrong World Industries' ("AWI's") property located at 4520 Guy Paine Road. It also includes an area referred to as the "former Macon Naval Ordnance Plant landfill" ("FMNOL") which is adjacent to and contiguous with the remote landfill and occupies approximately 15 acres on Macon Water Authority ("MWA") property. Additionally, it includes the drainage ditches to and from these landfills, and the affected sediments and biota in and around Rocky Creek.

13. The remote landfill, the FMNOL, and the drainage ditches leading to and from the landfills, are bordered to the north by Allied Industrial Park (formerly known as the Macon Naval Ordnance Plant ("MNOP")), and the AWI facility; to the east by the MWA's Rocky Creek Water Reclamation Facility, and Graphic Packaging International; and to the south by Rocky Creek.

14. An analysis of aerial photographs taken over a 50-year period, from 1938 to 1988, indicates that the remote landfill and the FMNOL appear as one large landfill from 1975 through 1988.

15. AWI has owned the property where the remote landfill is situated since 1959.

16. AWI has operated an acoustic ceiling tile manufacturing facility at the current location since 1948. AWI began disposing of general and industrial trash, old equipment, and excess bark and scrap wood in the remote landfill in the mid-1960s. AWI constructed a new waste water treatment plant in 1971, and disposed of fibrous waste material removed from the waste water treatment plant's filters in the remote landfill.

17. The City of Macon owned the property where the FMNOL is situated in the early 1940s when the U.S. Department of Defense (U.S. Navy) and Reynolds Corporation, under contract with and on behalf of the U.S. Navy, first started using it as a landfill. From 1941 through 1945, the Reynolds Corporation was engaged in producing munitions under contract with and on behalf of the U.S. Navy. In 1945, the U.S. Navy took over munitions production and continued to use the FMNOL. In 1960, the U.S. acquired the FMNOL from the City of Macon. In 1965, the U.S. sold the FMNOL to Maxson Electronics Corp. which produced munitions for the U.S. Navy. In 1973, Riker-Maxson Corp. sold the FMNOL to the Allied Chemical Corp. which manufactured automobile seat belts. In 1980, Allied Chemical Corp. sold the FMNOL to the Macon-Bibb County Industrial Authority ("MBCIA"). In 1984 and 1986 (two transactions for two parcels of the FMNOL property), the MBCIA sold the FMNOL to the Macon-Bibb County Water & Sewerage Authority which is currently called the MWA.

18. The FMNOL was used for disposal of solid wastes and ordnance throughout the operational history of the MNOP, from approximately 1941 to 1973. The FMNOL was also used for disposal of used parts and construction debris through at least 1988.

19. The DoD has designated the Army as the lead agent for Formerly Used Defense Sites ("FUDS") regardless which DoD component previously operated at the property. The Army further delegated execution of FUDS responsibilities to the United States Army Corps of Engineers ("USACE"). A FUDS is defined as a facility or site that was under the jurisdiction of the Secretary of the Army and owned by, leased to, or otherwise possessed by the United States at the time of actions leading to contamination by hazardous substances, the site having been transferred from DoD control prior to October 17, 1986. The USACE addresses claims related to FUDS on behalf of DoD and remains subject to DoD oversight. The Site is a FUDS.

20. In 1996 the USACE conducted a site investigation at the FMNOL wherein it analyzed samples of surface and subsurface soils, groundwater, surface water from the FMNOL's drainage easement, sediment samples from Rocky Creek, and biota (fish tissue) from Rocky Creek. Elevated levels of hazardous substances were identified in the sampled media.

21. In 1996, AWI collected four sludge samples from the remote landfill. Analytical results revealed PCBs at concentrations greater than the notification concentration of 1.55 mg/kg for PCBs specified in the State of Georgia's Hazardous Site Response Act.

22. From 1998 to 1999, the USACE conducted a Phase I remedial investigation wherein it analyzed samples of soil collected from both landfills; groundwater, surface water and/or sediment from the drainage easement leading from AWI to Rocky Creek; surface water and/or sediment from Rocky Creek; and biota samples from Rocky Creek. Elevated levels of hazardous substances were identified in the sampled media.

23 In 2005, the Georgia Department of Natural Resources conducted surface water sampling at FMNOL. Surface water samples collected downstream from a previously existing pond near the southern end of the FMNOL were found to contain trichloroethylene ("TCE") and cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride.

24. In 2009, EPA conducted an expanded site inspection ("ESI") which included the following: surface and subsurface soil samples collected from both landfills; groundwater samples from the FMNOL; surface water and sediment samples from drainage ditches from both landfills; and surface water and sediment samples from Rocky Creek.

25. Surface and subsurface soil samples collected during the ESI contained volatile organic compounds ("VOCs"), semi-organic compounds ("SVOCs"), pesticides, PCBs, and metals.

26. One subsurface soil sample taken during the ESI contained cis-1,2-DCE at an elevated concentration. Elevated levels of VOCs were also indicated in soil samples collected during the 1996 site investigation, and the Phase I remedial investigation of 1998 to 1999.

27. The groundwater migration pathway is of concern at the Site due to elevated concentrations of VOCs detected in groundwater samples. However, municipal water in the area is obtained from surface water intakes located upstream of the Site.

28. Surface water is a pathway of concern. Soil samples collected from the landfills during the ESI, and sediment samples collected from drainage ditches that receive runoff from the landfills and Rocky Creek, contained elevated concentrations of pesticides, PCBs, and metals.

29. Rocky Creek is fished upstream and downstream of both landfills and historically the fish have been consumed. In 2007, Georgia Department of Natural Resources' personnel observed people fishing in Rocky Creek. Since 2011, the EPA has advised the public not to consume any fish from Rocky Creek. Bibb County has posted signs advising fishermen that the fish in Rocky Creek contain PCBs.

30. Rocky Creek flows for approximately one and a half miles before it converges with Tobesofkee Creek, which flows for approximately four miles before it converges with the Ocmulgee River. All three water bodies are accessible to the public and are fished recreationally.

31. On October 21, 2010, pursuant to CERCLA Section 105, 42 U.S.C. § 9605, the Site was proposed for listing on the National Priorities List, and listing was finalized on September 16, 2011.

VI. CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the Findings of Fact set forth above, EPA has determined that:

32. The Armstrong World Industries Superfund Site, Operable Unit 2, is a "facility" as defined in Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

33. The contamination found at the Site including VOCs, SVOCs, PCBs, metals and pesticides, as identified in the Findings of Fact above, include "hazardous substances" as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

34. The conditions described in the Findings of Fact above constitute an actual and/or threatened "release" of a hazardous substance from the facility as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

35. Each Respondent and Settling Federal Agency is a "person" as defined in Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

36. Respondents and Settling Federal Agency are potentially responsible parties under Sections 104, 107 and 122 of CERCLA, 42 U.S.C. §§ 9604, 9607 and 9622.

a. Each Respondent and Settling Federal Agency is a potentially responsible party under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).

b. Respondent AWI (Armstrong World Industries, Inc.), is a current "owner" and/or "operator" of the remote landfill, as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Section 107(a)(1) of CERCLA, 42 U.S.C. § 9607(a)(1).

c. Respondent MWA (Macon Water Authority, formerly known as Macon-Bibb County Water & Sewerage Authority) is a current "owner" and/or "operator" of the FMNOL, as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Section 107(a)(1) of CERCLA, 42 U.S.C. § 9607(a)(1).

d. The following Respondents were "owners" and/or "operators" of the FMNOL at the time of disposal of hazardous substances as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2): Macon/Bibb County (formerly known as the City of Macon); Honeywell International Inc. (formerly known as Allied Chemical Corp.); and The Unimax Corp. (formerly known as Maxson Electronics Corp. and/or Riker-Maxson Corp.).

e. The Settling Federal Agency was an "owner" and/or "operator" of the FMNOL at the time of disposal of hazardous substances as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2).

f. Reynolds Metals Company, LLC (formerly known as Reynolds Metals Company, into which Reynolds Corp. merged) and the Settling Federal Agency arranged for disposal of hazardous substances at the FMNOL within the meaning of Section 107(a)(3) of CERCLA, 42 U.S.C. § 9607(a)(3).

37. The actions required by this Settlement Agreement are necessary to protect the public health, welfare or the environment, are in the public interest, 42 U.S.C. § 9622(a), are consistent with CERCLA and the NCP, 42 U.S.C. §§ 9604(a)(1), 9622(a), and will expedite effective remedial action and minimize litigation, 42 U.S.C. § 9622(a).

38. EPA has determined that Respondents are qualified to conduct the RI/FS within the meaning of Section 104(a) of CERCLA, 42 U.S.C. § 9604(a), and will carry out the Work properly and promptly, in accordance with Sections 104(a) and 122(a) of CERCLA, 42 U.S.C. §§ 9604(a) and 9622(a), if Respondents comply with the terms of this Settlement Agreement.

VII. SETTLEMENT AGREEMENT AND ORDER

39. Based upon the foregoing Findings of Fact and Conclusions of Law and Determinations, it is hereby Ordered and Agreed that Respondents and Settling Federal Agency shall comply with all provisions of this Settlement Agreement, including, but not limited to, all appendices to this Settlement Agreement and all documents incorporated by reference into this Settlement Agreement, and that the United States on behalf of Settling Federal Agency shall

reimburse Respondents for Future Response Costs, and for their response costs related to the Work as provided in the Confidential Site Participation Agreement entered into among Respondents and Settling Federal Agency contemporaneously with or prior to this Settlement Agreement.

VIII. DESIGNATION OF CONTRACTORS AND PROJECT COORDINATORS

40. Selection of Contractors, Personnel. All Work performed under this Settlement Agreement shall be under the direction and supervision of qualified personnel. Within 30 days of the Effective Date of this Settlement Agreement, and before the Work outlined below begins, Respondents shall notify EPA in writing of the names, titles, and qualifications of the personnel, including contractors, subcontractors, consultants and laboratories to be used in carrying out such Work. With respect to any proposed contractor, Respondents shall demonstrate that the proposed contractor has a quality system that complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995, or most recent version), by submitting a copy of the proposed contractor's Quality Management Plan ("QMP"). The QMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)," (EPA/240/B-01/002, March 2001; Reissued May 2006) or subsequently issued guidance) or equivalent documentation as determined by EPA. The qualifications of the persons undertaking the Work for Respondents shall be subject to EPA's review, for verification that such persons meet minimum technical background and experience requirements. This Settlement Agreement is contingent on Respondents' demonstration to EPA's satisfaction that Respondents are qualified to perform properly and promptly the actions set forth in this Settlement Agreement. If EPA disapproves in writing of any person's technical qualifications, Respondents shall notify EPA of the identity and qualifications of the replacements within 30 days after the written notice. If EPA subsequently disapproves of the replacement, EPA reserves the right to terminate this Settlement Agreement and to conduct a complete RI/FS, and to seek reimbursement for costs and penalties from Respondents. During the course of the RI/FS, Respondents shall notify EPA in writing of any changes or additions in the personnel used to carry out such Work, providing their names, titles, and qualifications. EPA shall have the same right to disapprove changes and additions to personnel as it has hereunder regarding the initial notification.

41. Within 30 days after the Effective Date, Respondents shall designate a Project Coordinator who shall be responsible for administration of all actions by Respondents required by this Settlement Agreement and shall submit to EPA the designated Project Coordinator's name, address, telephone number, and qualifications. To the greatest extent possible, the Project Coordinator shall be present on Site or readily available during Site Work. EPA retains the right to disapprove of the designated Project Coordinator. If EPA disapproves of the designated Project Coordinator, Respondents shall retain a different Project Coordinator and shall notify EPA of that person's name, address, telephone number and qualifications within 30 days following EPA's disapproval. Respondents shall have the right to change their Project Coordinator, subject to EPA's right to disapprove. Respondents shall notify EPA 15 days before such a change is made. The initial notification may be made orally, but shall be promptly

followed by a written notification. Receipt by Respondents' Project Coordinator of any notice or communication from EPA relating to this Settlement Agreement shall constitute receipt by Respondents.

42. EPA has designated Brian Farrier of the Region 4 Superfund Remedial and Site Evaluation Branch as its Project Coordinator. EPA will notify Respondents of a change of its designated Project Coordinator. Except as otherwise provided in this Settlement Agreement, Respondents shall direct all submissions required by this Settlement Agreement to the Project Coordinator at 61 Forsyth Street SW, Atlanta, Georgia 30303 and farrier.brian@epa.gov.

43. EPA's Project Coordinator shall have the authority lawfully vested in a Remedial Project Manager ("RPM") and On-Scene Coordinator ("OSC") by the NCP. In addition, EPA's Project Coordinator shall have the authority consistent with the NCP, to halt any Work required by this Settlement Agreement, and to take any necessary response action when s/he determines that conditions at the Site may present an immediate endangerment to public health or welfare or the environment. The absence of the EPA Project Coordinator from the area under study pursuant to this Settlement Agreement shall not be cause for the stoppage or delay of Work.

44. EPA shall arrange for a qualified person to assist in its oversight and review of the conduct of the RI/FS, as required by Section 104(a) of CERCLA, 42 U.S.C. Section 9604(a). Such person shall have the authority to observe Work and make inquiries in the absence of EPA, but not to modify the RI/FS Work Plan.

IX. WORK TO BE PERFORMED

45. Activities and Deliverables. Respondents shall conduct activities and submit plans, reports, or other deliverables as provided by the attached SOW, which is incorporated by reference, for the development of the RI/FS. All such Work shall be conducted in accordance with the provisions of this Settlement Agreement, the SOW, CERCLA, the NCP, and EPA guidance, including, but not limited to, the "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA" ("RI/FS Guidance") (OSWER Directive # 9355.3-01, October 1988 or subsequently issued guidance), "Guidance for Data Usability in Risk Assessment" (OSWER Directive #9285.7-09A, April 1992 or subsequently issued guidance), and guidance referenced therein, and guidances referenced in the SOW, as may be amended or modified by EPA. The general activities that Respondents are required to perform are identified below, followed by a list of plans, reports, and other deliverables. The tasks that Respondents must perform are described more fully in the SOW and guidances. The activities, plans, reports, and other deliverables identified below shall be developed as provided in the RI/FS Work Plan and Sampling and Analysis Plan, and shall be submitted to EPA as provided therein. All Work performed under this Settlement Agreement shall be in accordance with the schedules in this Settlement Agreement or established in the SOW, and in full accordance with the standards, specifications, and other requirements of the RI/FS Work Plan and Sampling and Analysis Plan, as initially approved or modified by EPA, and as may be amended or modified by EPA from time to time. In accordance with the schedules established in this Settlement Agreement or in the SOW, Respondents shall submit to EPA and the State 2 copies of all plans, reports, and other deliverables required under this Settlement Agreement, the SOW and the

RI/FS Work Plan. All plans, reports and other deliverables will be reviewed and approved by EPA pursuant to Section X (EPA Approval of Plans and Other Submissions). Upon EPA's request, Respondents shall also provide copies of plans, reports, or other deliverables to Community Advisory Groups, Technical Assistance Grant recipients, or any other entities as directed by EPA.

a. Respondents shall submit all deliverables to EPA and the State in electronic form. If any deliverable includes maps, drawings, or other exhibits that are larger than 8.5" by 11", Respondents shall also provide EPA with paper copies of such exhibits.

b. Technical Specifications for Deliverables. Sampling and monitoring data should be submitted in accordance with Region 4 policies, guidelines, and formats. The files must meet the specification of the EPA Region 4 Electronic Data Deliverable (EDD) format. Other delivery methods may be allowed if electronic direct submission presents a significant burden or as technology changes.

c. Spatial data, including spatially-referenced data and geospatial data, should be submitted: (1) in the ESRI File Geodatabase format; and (2) as unprojected geographic coordinates in decimal degree format using North American Datum 1983 (NAD83) or World Geodetic System 1984 (WGS84) as the datum. If applicable, submissions should include the collection method(s). Projected coordinates may optionally be included but must be documented. Spatial data should be accompanied by metadata, and such metadata should be compliant with the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata and its EPA profile, the EPA Geospatial Metadata Technical Specification. An add-on metadata editor for ESRI software, the EPA Metadata Editor (EME), complies with these FGDC and EPA metadata requirements and is available at <https://edg.epa.gov/EME/>.

d. Each file must include an attribute name for each site unit or sub-unit submitted. Consult <http://www.epa.gov/geospatial/policies.html> for any further available guidance on attribute identification and naming.

e. Spatial data submitted by Respondents does not, and is not intended to, define the boundaries of the Site.

f. Scoping. EPA will determine the Site-specific objectives of the RI/FS and devise a general management approach for the Site, as stated in the attached SOW. Respondents shall conduct the remainder of scoping activities as described in the attached SOW and referenced guidances. At the conclusion of the project planning phase, Respondents shall provide EPA with the following plans, reports, and other deliverables:

(1) RI/FS Work Plan. Within one hundred and eighty (180) days after the Effective Date, Respondents shall submit to EPA a complete RI/FS Work Plan. Upon its approval by EPA pursuant to Section X (EPA Approval of Plans and Other Submissions), the RI/FS Work Plan shall be incorporated into and become enforceable under this Settlement Agreement.

(2) Sampling and Analysis Plan. In accordance with the schedule set forth in the RI/FS Work Plan, Respondents shall submit a Sampling and Analysis Plan to EPA for review and approval pursuant to Section X (EPA Approval of Plans and Other Submissions). This plan shall consist of a Field Sampling Plan ("FSP") and a Quality Assurance Project Plan ("QAPP"), as described in the Statement of Work and guidances, including, without limitation, "EPA Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/600/R-02/009, December 2002 or subsequently issued guidance), and "EPA Requirements for Quality Assurance Project Plans (QA/R-5)" (EPA 240/B-01/003, March 2001 or subsequently issued guidance). Upon its approval by EPA pursuant to Section X (EPA Approval of Plans and Other Submissions), the Sampling and Analysis Plan shall be incorporated into and become enforceable under this Settlement Agreement.

(3) Site Health and Safety Plan. As part of the RI/FS Work Plan, Respondents shall submit for EPA review and comment a Site Health and Safety Plan that ensures the protection of on-site workers and the public during performance of on-site Work under this Settlement Agreement. This plan shall be prepared in accordance with EPA's Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June 1992 or subsequently issued guidance). In addition, the plan shall comply with all currently applicable Occupational Safety and Health Administration ("OSHA") regulations found at 29 C.F.R. Part 1910. If EPA determines that it is appropriate, the plan shall also include contingency planning. Respondents shall incorporate all changes to the plan recommended by EPA and shall implement the plan during the pendency of the RI/FS.

g. Community Involvement Plan. EPA will prepare a community involvement plan, in accordance with EPA guidance and the NCP. As requested by EPA, Respondents shall provide information supporting EPA's community involvement plan and shall participate in the preparation of such information for dissemination to the public and in public meetings which may be held or sponsored by EPA to explain activities at or concerning the Site.

h. Technical Assistance Plan. Within 60 days after a request by EPA, Respondents shall provide EPA with a Technical Assistance Plan ("TAP") for arranging (at Respondents' own expense, up to \$50,000) for a qualified community group: (1) to receive services from [an] independent technical advisor[s] who can help group members understand Site cleanup issues, and (2) to share this information with others in the community during the Work conducted pursuant to this Settlement Agreement. The TAP shall state that Respondents will provide and arrange for any additional assistance needed if the selected community group demonstrates such a need as provided in the SOW prior to EPA's issuance of the Record of Decision contemplated by this Settlement Agreement. If EPA disapproves of or requires revisions to the Respondents' draft TAP, in whole or in part, then Respondents shall amend and submit to EPA a revised TAP that is responsive to EPA's comments, within 60 days after receiving EPA's comments.

i. Site Characterization. Following EPA approval or modification of the RI/FS Work Plan and Sampling and Analysis Plan, Respondents shall implement the provisions of these plans to characterize the Site. Respondents shall complete Site characterization and submit all plans, reports, and other deliverables in accordance with the schedules and deadlines

established in this Settlement Agreement, the SOW, and/or the EPA-approved RI/FS Work Plan and Sampling and Analysis Plan.

j. Reuse Assessment. If EPA, in its sole discretion, determines that a Reuse Assessment is necessary, Respondents will perform the Reuse Assessment in accordance with the SOW, RI/FS Work Plan, and applicable guidance. The Reuse Assessment should provide sufficient information to develop realistic assumptions of the reasonably anticipated future uses for the Site. Respondents shall prepare the Reuse Assessment in accordance with EPA guidance, including, but not limited to: "Reuse Assessments: A Tool To Implement The Superfund Land Use Directive," OSWER Directive 9355.7-06P, June 4, 2001, or subsequently issued guidance.

k. Baseline Human Health Risk Assessment and Ecological Risk Assessment. Respondents will perform the Baseline Human Health Risk Assessment and Ecological Risk Assessment ("Risk Assessments") in accordance with the SOW, RI/FS Work Plan, and applicable EPA guidance, including but not limited to: "Interim Final Risk Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual (Part A)," (RAGS, EPA-540-1-89-002, OSWER Directive 9285.7-01A, December 1989); "Interim Final Risk Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments)," (RAGS, EPA 540-R-97-033, OSWER Directive 9285.7-01D, January 1998); "Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments" (ERAGS, EPA-540-R-97-006, OSWER Directive 9285.7-25, June 1997), or subsequently issued guidance.

l. Draft Remedial Investigation Report. In accordance with the schedule set forth in the approved RI/FS Work Plan, Respondents shall submit to EPA for review and approval pursuant to Section X (EPA Approval of Plans and Other Submissions), a Draft Remedial Investigation Report consistent with the SOW, RI/FS Work Plan, and Sampling and Analysis Plan. The Draft RI Report shall also contain the Risk Assessments.

m. Treatability Studies. Respondents shall conduct treatability studies, except where Respondents can demonstrate to EPA's satisfaction that they are not needed. The major components of the treatability studies are described in the SOW. In accordance with the schedules or deadlines established in this Settlement Agreement, the SOW and/or the EPA-approved RI/FS Work Plan, Respondents shall provide EPA with the following plans, reports, and other deliverables for review and approval pursuant to Section X (EPA Approval of Plans and Other Submissions):

(1) Identification of Candidate Technologies Memorandum. This memorandum shall be submitted as specified by EPA.

(2) Treatability Testing Statement of Work. If EPA determines that treatability testing is required, Respondents shall submit a Treatability Testing Statement of Work ("TTSOW") as specified by EPA.

(3) Treatability Testing Work Plan. Within 30 days after submission of the TTSOW, Respondents shall submit a Treatability Testing Work Plan, including a schedule.

(4) Treatability Study Sampling and Analysis Plan. Within 30 days after identification of the need for a separate or revised QAPP or FSP, Respondents shall submit a Treatability Study Sampling and Analysis Plan as provided in the Statement of Work and the Work Plan.

(5) Treatability Study Site Health and Safety Plan. Within 60 days after the identification of the need for a revised Health and Safety Plan, Respondents shall submit a Treatability Study Site Health and Safety Plan.

(6) Treatability Study Evaluation Report. Within 60 days after completion of any treatability testing, Respondents shall submit a treatability study evaluation report as provided in the Statement of Work and Work Plan.

n. Development and Screening of Alternatives. Respondents shall develop an appropriate range of waste management options that will be evaluated through the development and screening of alternatives, as provided in the SOW and RI/FS Work Plan. In accordance with the schedules or deadlines established in this Settlement Agreement, the SOW, and/or the EPA-approved RI/FS Work Plan, Respondents shall provide EPA with the following deliverables for review and approval pursuant to Section X (EPA Approval of Plans and Other Submissions):

(1) Memorandum on Remedial Action Objectives. The Memorandum on Remedial Action Objectives shall include remedial action objectives for Engineering Controls as well as for Institutional Controls.

(2) Memorandum on Development and Screening of Alternatives. The Memorandum shall summarize the development and screening of remedial alternatives.

o. Detailed Analysis of Alternatives. Respondents shall conduct a detailed analysis of remedial alternatives, as described in the SOW and RI/FS Work Plan. In accordance with the deadlines or schedules established in this Settlement Agreement, the SOW, and/or the EPA-approved RI/FS Work Plan, Respondents shall provide EPA with the following deliverables and presentation for review and approval pursuant to Section X (EPA Approval of Plans and Other Submissions):

(1) Comparative Analysis of Alternatives Technical Memorandum and Presentation to EPA. Respondents shall submit a technical memorandum on comparative analysis to EPA. Within forty-five (45) days after submitting the technical memorandum on comparative analysis, Respondents will present to EPA a summary of the findings of the remedial investigation and remedial action objectives, and present the results of the nine criteria evaluation and comparative analysis, as described in the SOW.

(2) Alternatives Analysis for Institutional Controls and Screening. Respondents shall submit a technical memorandum on the Institutional Controls identified in the Memorandum on Development and Screening of Alternatives as potential remedial actions. The Alternatives Analysis for Institutional Controls and Screening shall (i) state the objectives (i.e.,

what will be accomplished) for the Institutional Controls; (ii) determine the specific types of Institutional Controls that can be used to meet the remedial action objectives; (iii) investigate when the Institutional Controls need to be implemented and/or secured and how long they must be in place; (iv) research, discuss, and document any agreement with the proper entities (e.g., state, local government entities, local landowners, conservation organizations, Respondents) on exactly who will be responsible for securing, maintaining, and enforcing the Institutional Controls. The Alternatives Analysis for Institutional Controls and Screening shall also evaluate the Institutional Controls identified in the Memorandum on Development and Screening of Alternatives against the nine evaluation criteria outlined in the NCP (40 C.F.R. § 300.430(e)(9)(iii)) for CERCLA cleanups, including but not limited to costs to implement, monitor, and/or enforce the Institutional Controls. The Alternatives Analysis for Institutional Controls and Screening shall be submitted as an appendix to the Draft Feasibility Study Report.

(3) Draft Feasibility Study Report. Within ninety (90) days after the presentation to EPA described in Paragraph 45.o.(1), Respondents shall submit to EPA a Draft Feasibility Study Report which reflects the findings in the Risk Assessments. Respondents shall refer to Table 6-5 of the RI/FS Guidance for report content and format. The draft report as amended, and the administrative record, shall provide the basis for the proposed plan under CERCLA Sections 113(k) and 117(a), 42 U.S.C. §§ 9613(k) and 9617(a), by EPA, and shall document the development and analysis of remedial alternatives.

46. Upon receipt of the draft FS report, EPA will evaluate, as necessary, the estimates of the risk to the public and environment that are expected to remain after a particular remedial alternative has been completed and will evaluate the durability, reliability and effectiveness of any proposed Institutional Controls.

47. Modification of the RI/FS Work Plan.

a. If at any time during the RI/FS process, Respondents identify a need for additional data, Respondents shall submit a memorandum documenting the need for additional data to the EPA Project Coordinator within 30 days after identification. EPA in its discretion will determine whether the additional data will be collected by Respondents and whether it will be incorporated into plans, reports, and other deliverables.

b. In the event of unanticipated or changed circumstances at the Site, Respondents shall notify the EPA Project Coordinator by telephone within 24 hours of discovery of the unanticipated or changed circumstances. In the event that EPA determines that the immediate threat or the unanticipated or changed circumstances warrant changes in the RI/FS Work Plan, EPA shall modify or amend the RI/FS Work Plan in writing accordingly. Respondents shall perform the RI/FS Work Plan as modified or amended.

c. EPA may determine that in addition to tasks defined in the initially approved RI/FS Work Plan, other additional Work may be necessary to accomplish the objectives of the RI/FS. Respondents agree to perform these response actions in addition to those required by the initially approved RI/FS Work Plan, including any approved modifications, if EPA determines that such actions are necessary for a complete RI/FS.

d. Respondents shall confirm their willingness to perform the additional Work in writing to EPA within 21 days after receipt of the EPA request. If Respondents object to any modification determined by EPA to be necessary pursuant to this Paragraph, Respondents may seek dispute resolution pursuant to Section XV (Dispute Resolution). The SOW and/or RI/FS Work Plan shall be modified in accordance with the final resolution of the dispute.

e. Respondents shall complete the additional Work according to the standards, specifications, and schedule set forth or approved by EPA in a written modification to the RI/FS Work Plan or written RI/FS Work Plan supplement. EPA reserves the right to conduct the Work itself at any point, to seek reimbursement from Respondents, and/or to seek any other appropriate relief.

f. Nothing in this Paragraph shall be construed to limit EPA's authority to require performance of further response actions at the Site.

48. Off-Site Shipment

a. Respondents may ship hazardous substances, pollutants and contaminants from the Site to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondents will be deemed to be in compliance with CERCLA Section 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Respondents obtain a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b). Respondents may ship Investigation Derived Waste (IDW) from the Site to an off-Site facility only if Respondents comply with EPA's "Guide to Management of Investigation Derived Waste," OSWER 9345.3-03FS (Jan. 1992).

b. Respondents may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, they provide written notice to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator. This written notice requirement shall not apply to any off-Site shipments when the total quantity of all such shipments will not exceed ten cubic yards. The written notice must include the following information, if available: (1) the name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. Respondents also shall notify the state environmental official referenced above and the EPA Project Coordinator of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. Respondents shall provide the written notice after the award of the contract for remedial investigation and feasibility study and before the Waste Material is shipped.

49. Meetings. Respondents shall make presentations at, and participate in, meetings at the request of EPA during the initiation, conduct, and completion of the RI/FS. In addition to discussion of the technical aspects of the RI/FS, topics will include anticipated problems or new issues. Meetings will be scheduled at EPA's discretion.

50. Progress Reports. In addition to the plans, reports and other deliverables set forth in this Settlement Agreement, Respondents shall provide to EPA via email monthly progress reports by the 15th day of the following month. At a minimum, with respect to the preceding month, these progress reports shall (1) describe the actions which have been taken to comply with this Settlement Agreement during that month, (2) include all validated results of sampling and tests and all other data received by Respondents, (3) describe Work planned for the next two months with schedules relating such Work to the overall project schedule for RI/FS completion, and (4) describe all problems encountered and any anticipated problems, any actual or anticipated delays, and solutions developed and implemented to address any actual or anticipated problems or delays.

51. Emergency Response and Notification of Releases.

a. In the event of any action or occurrence during, arising from, or relating to, performance of the Work that causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Respondents shall immediately take all appropriate action. Respondents shall take these actions in accordance with all applicable provisions of this Settlement Agreement, including, but not limited to, the Health and Safety Plan, in order to prevent, abate, or minimize such release or endangerment caused or threatened by the release. Respondents shall also immediately notify the EPA Project Coordinator or, in the event of his/her unavailability, the On Scene Coordinator ("OSC") or the Regional Duty Officer at (404) 562-8700 of the incident or Site conditions. In the event that Respondents fail to take appropriate response action as required by this Paragraph, and EPA takes such action instead, Respondents shall reimburse EPA all costs of the response action not inconsistent with the NCP pursuant to Section XVIII (Payment of Response Costs).

b. In addition, in the event of any release of a hazardous substance from the Site, Respondents shall immediately notify the EPA Project Coordinator, the OSC or Regional Duty Officer at (404) 562-8700 and the National Response Center at (800) 424-8802. Respondents shall submit a written report to EPA within 7 days after each release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. This reporting requirement is in addition to, and not in lieu of, reporting under Section 103(c) of CERCLA, 42 U.S.C. § 9603(c), and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. § 11004, *et seq.*

X. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS

52. After review of any plan, report or other item that is required to be submitted for approval pursuant to this Order, in a notice to Respondents EPA shall: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that Respondents modify the submission; or (e) any combination of the above. However, EPA shall not modify a submission without first providing Respondents at least one notice of

deficiency and an opportunity to cure within 30 days, except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved due to material defects.

53. In the event of approval, approval upon conditions, or modification by EPA, pursuant to Paragraph 52(a), (b), (c), or (e), Respondents shall proceed to take any action required by the plan, report, or other deliverable, as approved or modified by EPA subject only to their right to invoke the Dispute Resolution procedures set forth in Section XV (Dispute Resolution) with respect to the modifications or conditions made by EPA. Following EPA approval or modification of a submission or portion thereof, Respondents shall not thereafter alter or amend such submission or portion thereof unless directed by EPA. In the event that EPA modifies the submission to cure the deficiencies pursuant to Paragraph 52(c) and the submission had a material defect, EPA retains the right to seek stipulated penalties, as provided in Section XVI (Stipulated Penalties).

54. Resubmission.

a. Upon receipt of a notice of disapproval, Respondents shall, within 30 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the plan, report, or other deliverable for approval. Any stipulated penalties applicable to the submission, as provided in Section XVI, shall accrue during the 30-day period or otherwise specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect as provided in Paragraphs 55 and 56.

b. Notwithstanding the receipt of a notice of disapproval, Respondents shall proceed to take any action required by any non-deficient portion of the submission, unless otherwise directed by EPA. Implementation of any non-deficient portion of a submission shall not relieve Respondents of any liability for stipulated penalties under Section XVI (Stipulated Penalties).

c. Respondents shall not proceed with any activities or tasks dependent upon the following deliverables until receiving EPA approval, approval on condition or modification of the following deliverables: RI/FS Work Plan and Sampling and Analysis Plan; Health and Safety Plan; Draft Remedial Investigation Report and Treatability Testing Work Plan; Treatability Testing Sampling and Analysis Plan; Treatability Testing Health and Safety Plan, and Draft Feasibility Study Report. While awaiting EPA approval, approval on condition or modification of these deliverables, Respondents shall proceed with all other tasks and activities which may be conducted independently of these deliverables, in accordance with the schedule set forth under this Settlement Agreement.

d. For all remaining deliverables not listed above in Paragraph 54.c., Respondents shall proceed with all subsequent tasks, activities, and deliverables without awaiting EPA approval on the submitted deliverable. EPA reserves the right to stop Respondents from proceeding further, either temporarily or permanently, on any task, activity, or deliverable at any point during the RI/FS.

55. If EPA disapproves a resubmitted plan, report or other deliverable, or portion thereof, EPA may again direct Respondents to correct the deficiencies. EPA shall also retain the right to modify or develop the plan, report, or other deliverable. Respondents shall implement any such plan, report, or deliverable as corrected, modified, or developed by EPA, subject only to Respondents' right to invoke the procedures set forth in Section XV (Dispute Resolution).

56. If upon resubmission, a plan, report, or other deliverable is disapproved or modified by EPA due to a material defect, Respondents shall be deemed to have failed to submit such plan, report, or other deliverable timely and adequately unless Respondents invoke the dispute resolution procedures in accordance with Section XV (Dispute Resolution) and EPA's action is revoked or substantially modified pursuant to a Dispute Resolution decision issued by EPA or superseded by an agreement reached pursuant to that Section. The provisions of Section XV (Dispute Resolution) and Section XVI (Stipulated Penalties) shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is not otherwise revoked, substantially modified, or superseded as a result of a decision or agreement reached pursuant to the Dispute Resolution process set forth in Section XV, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XVI.

57. In the event that EPA takes over some of the tasks, but not the preparation of the RI Report or the FS Report, Respondents shall incorporate and integrate information supplied by EPA into the final reports.

58. All plans, reports, and other deliverables submitted to EPA under this Settlement Agreement shall, upon approval or modification by EPA, be incorporated into and enforceable under this Settlement Agreement. In the event EPA approves or modifies a portion of a plan, report, or other deliverable submitted to EPA under this Settlement Agreement, the approved or modified portion shall be incorporated into and enforceable under this Settlement Agreement.

59. Neither failure of EPA to expressly approve or disapprove of Respondents' submissions within a specified time period, nor the absence of comments, shall be construed as approval by EPA. Whether or not EPA gives express approval for Respondents' deliverables, Respondents are responsible for preparing deliverables acceptable to EPA.

XI. QUALITY ASSURANCE, SAMPLING, AND ACCESS TO INFORMATION

60. Quality Assurance. Respondents shall assure that Work performed, samples taken, and analyses conducted conform to the requirements of the SOW, the QAPP, and guidance identified therein. Respondents will assure that field personnel used by Respondents are properly trained in the use of field equipment and in chain of custody procedures. Respondents shall only use laboratories which have a documented quality system that complies with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, March 2001; Reissued May 2006) or equivalent documentation as determined by EPA.

61. Sampling.

a. All results of sampling, tests, modeling, or other data (including raw data) generated by Respondents, or on Respondents' behalf, during the period that this Settlement Agreement is effective, shall be submitted to EPA in the next monthly progress report as described in Paragraph 50 of this Settlement Agreement. EPA will make available to Respondents validated data generated by EPA unless it is exempt from disclosure by any federal or state law or regulation.

b. Respondents shall verbally notify EPA and the State at least 15 days prior to conducting significant field events as described in the SOW, RI/FS Work Plan, or Sampling and Analysis Plan. At EPA's verbal or written request, or the request of EPA's oversight assistant, Respondents shall allow split or duplicate samples to be taken by EPA (and its authorized representatives) or the State of any samples collected in implementing this Settlement Agreement. All split samples of Respondents shall be analyzed by the methods identified in the QAPP.

62. Access to Information.

a. Respondents shall provide, upon request, to EPA and the State copies of all records, reports, documents, and other information (including records, reports, documents, and other information in electronic form)(hereinafter referred to as "Records") within their possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Settlement Agreement, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. Respondents shall also make available to EPA and the State, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

b. Respondents may assert business confidentiality claims covering part or all of the Records submitted to EPA and the State under this Settlement Agreement to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Records determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies Records when they are submitted to EPA and the State, or if EPA has notified Respondents that the Records are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such Records without further notice to Respondents. Respondents shall segregate and clearly identify all Records submitted under this Settlement Agreement for which Respondents assert business confidentiality claims.

c. Respondents may assert that certain Records are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Respondents assert such a privilege in lieu of providing Records, they shall provide EPA and the State with the following: 1) the title of the Record; 2) the date of the Record; 3) the name, title, affiliation (e.g. company or firm), and address of the author of the Record; 4) the name and title of each addressee and

recipient; 5) a description of the contents of the Record; and 6) the privilege asserted by Respondents. However, no Records created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged or confidential.

d. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other Records evidencing conditions at or around the Site.

63. In entering into this Settlement Agreement, Respondents waive any objections to any data gathered, generated, or evaluated by EPA, the State, or Respondents in the performance or oversight of the Work that has been verified according to the quality assurance/quality control ("QA/QC") procedures required by the Settlement Agreement or any EPA-approved RI/FS Work Plans or Sampling and Analysis Plans. If Respondents object to any other data relating to the RI/FS, Respondents shall submit to EPA a report that specifically identifies and explains its objections, describes the acceptable uses of the data, if any, and identifies any limitations to the use of the data. The report must be submitted to EPA within 30 days after the monthly progress report containing the data.

XII. SITE ACCESS AND INSTITUTIONAL CONTROLS

64. If the Site, or any other property where access is needed to implement this Settlement Agreement, is owned or controlled by any of Respondents, such Respondents shall, commencing on the Effective Date, provide EPA, the State, the other Respondents, and their respective representatives, including contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Settlement Agreement.

65. Where any action under this Settlement Agreement is to be performed in areas owned by or in possession of someone other than Respondents, Respondents shall use their best efforts to obtain all necessary access agreements within 60 days after the Effective Date, or as otherwise specified in writing by the EPA Project Coordinator. Respondents shall immediately notify EPA if after using their best efforts they are unable to obtain such agreements. For purposes of this Paragraph, "best efforts" includes the payment of reasonable sums of money in consideration of access. Respondents shall describe in writing their efforts to obtain access. If Respondents cannot obtain access agreements, EPA may either (i) obtain access for Respondents or assist Respondents in gaining access, to the extent necessary to effectuate the response actions described herein, using such means as EPA deems appropriate; (ii) perform those tasks or activities with EPA contractors; or (iii) terminate the Settlement Agreement. Respondents shall reimburse EPA for all costs and attorney's fees incurred by the United States (not including Settling Federal Agency) in obtaining such access, in accordance with the procedures in Section XVIII (Payment of Response Costs). If EPA performs those tasks or activities with EPA contractors and does not terminate the Settlement Agreement, Respondents shall perform all other tasks or activities not requiring access to that property, and shall reimburse EPA for all costs incurred in performing such tasks or activities. Respondents shall integrate the results of any such tasks or activities undertaken by EPA into its plans, reports, and other deliverables.

66. Notwithstanding any provision of this Settlement Agreement, EPA and the State retain all of their access authorities and rights, as well as all of their rights to require land/water use restrictions, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

XIII. COMPLIANCE WITH OTHER LAWS

67. Respondents shall comply with all applicable state and federal laws and regulations when performing the RI/FS. No local, state, or federal permit shall be required for any portion of any action conducted entirely on-Site, including studies, if the action is selected and carried out in compliance with Section 121 of CERCLA, 42 U.S.C. § 9621. Where any portion of the Work is to be conducted off-Site and requires a federal or state permit or approval, Respondents shall submit timely and complete applications and take all other actions necessary to obtain and to comply with all such permits or approvals. This Settlement Agreement is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

XIV. RETENTION OF RECORDS

68. Until 10 years after EPA provides Respondents with notice, pursuant to Section XXXII (Notice of Completion of Work), that all Work has been fully performed in accordance with this Settlement Agreement, each Respondent shall preserve and retain all non-identical copies of Records (including Records in electronic form) now in its possession or control, or which come into its possession or control, that relate in any manner to its liability under CERCLA with regard to the Site, provided, however, that Respondents who are potentially liable as owners or operators of the Site must retain, in addition, all Records that relate to the liability of any other person under CERCLA with respect to the Site. Each Respondent must also retain, and instruct its contractors and agents to preserve, for the same period of time specified above all non-identical copies of the last draft or final version of any Records (including Records in electronic form) now in its possession or control or that come into its possession or control that relate in any manner to the performance of the Work, provided, however, that each Respondent (and its contractors and agents) must retain, in addition, copies of all data generated during the performance of the Work and not contained in the aforementioned Records required to be retained. Each of the above record retention requirements shall apply regardless of any corporate retention policy to the contrary.

69. At the conclusion of this document retention period, Respondents shall notify EPA at least 90 days prior to the destruction of any such Records, and, upon request by EPA, Respondents shall deliver any such Records to EPA. Respondents may assert that certain Records are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Respondents assert such a privilege, they shall provide EPA with the following: 1) the title of the Record; 2) the date of the Record; 3) the name and title of the author of the Record; 4) the name and title of each addressee and recipient; 5) a description of the subject of the Record; and 6) the privilege asserted by Respondents. However, no Records created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged or confidential.

70. Each Respondent hereby certifies individually that to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed, or otherwise disposed of any Records (other than identical copies) relating to its potential liability regarding the Site since the earlier of notification of potential liability by EPA, or the filing of suit against it regarding the Site, and that it has fully complied with any and all EPA requests for information pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

71. The United States acknowledges that each Settling Federal Agency (1) is subject to all applicable federal record retention laws, regulations, and policies; and (2) has certified that it has fully complied with EPA's requests for information regarding the Site pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(3) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

XV. DISPUTE RESOLUTION

72. Unless otherwise expressly provided for in this Settlement Agreement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Settlement Agreement. The Parties shall attempt to resolve any disagreements concerning this Settlement Agreement expeditiously and informally.

73. If Respondents object to any EPA action taken pursuant to this Settlement Agreement, including billings for Future Response Costs, they shall notify EPA in writing of their objection(s) within 15 days after such action, unless the objection(s) has/have been resolved informally. EPA and Respondents shall have 30 days from EPA's receipt of Respondents' written objection(s) to resolve the dispute (the "Negotiation Period"). The Negotiation Period may be extended at the sole discretion of EPA. Such extension may be granted orally but must be confirmed in writing.

74. Any agreement reached by the Parties pursuant to this Section shall be in writing and shall, upon signature by the Parties, be incorporated into and become an enforceable part of this Settlement Agreement. If the Parties are unable to reach an agreement within the Negotiation Period, an EPA management official at the Superfund Division Director level or higher will issue a written decision. EPA's decision shall be incorporated into and become an enforceable part of this Settlement Agreement. Respondents' obligations under this Settlement Agreement shall not be tolled by submission of any objection for dispute resolution under this Section. Following resolution of the dispute, as provided by this Section, Respondents shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with EPA's decision, whichever occurs, and regardless of whether Respondents agree with the decision.

XVI. STIPULATED PENALTIES

75. Respondents shall be liable to EPA for stipulated penalties in the amounts set forth in Paragraphs 76 and 77 for failure to comply with any of the requirements of this Settlement Agreement specified below unless excused under Section XVII (Force Majeure). "Compliance" by Respondents shall include completion of the Work under this Settlement Agreement or any

activities contemplated under any RI/FS Work Plan or other plan approved under this Settlement Agreement identified below, in accordance with all applicable requirements of law, this Settlement Agreement, the SOW, and any plans or other documents approved by EPA pursuant to this Settlement Agreement and within the specified time schedules established by and approved under this Settlement Agreement.

76. Stipulated Penalty Amounts – Work (Including Payments)

a. The following stipulated penalties shall accrue per day for any noncompliance identified in Paragraph 76(b):

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$ 1,000	1 st through 14 th day
\$ 2,000	15 th through 30 th day
\$ 5,000	31 st day and beyond

b. Compliance Milestones

(1) Failure to timely submit payment of the undisputed portion of any Future Response Costs as provided in Section XVIII of this Settlement Agreement.

(2) Failure to timely establish an escrow account in the event of a dispute regarding Future Response Costs as provided in Section XVIII of this Settlement Agreement.

(3) Failure to timely submit insurance as provided in Section XXV and financial assurance as provided in Section XXVI of this Settlement Agreement.

(4) Failure to timely designate a Project Coordinator as provided in Section VIII of this Settlement Agreement.

(5) Failure to timely perform any other aspect of the Work under this Settlement Agreement (excluding plans, reports, or other written documents).

77. Stipulated Penalty Amounts – Plans, Reports, or Other Written Documents.

a. The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate plans, reports, or other written documents pursuant to this Settlement Agreement including, but not limited to, failure to adhere to the General Schedule for Major Deliverables in the SOW:

Penalty Per Violation Per Day

Period of Noncompliance

\$ 500

1st through 14th day

\$ 1,000

15th through 30th day

\$ 3,000

31st day and beyond

78. In the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 96 (Work Takeover), Respondents shall be liable for a stipulated penalty in the amount of \$250,000.

79. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: (1) with respect to a deficient submission under Section X (EPA Approval of Plans and Other Submissions), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Respondents of any deficiency; and (2) with respect to a decision by the EPA Management Official designated in Paragraph 74 of Section XV (Dispute Resolution), during the period, if any, beginning on the 21st day after the Negotiation Period begins until the date that the EPA Management Official issues a final decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement Agreement.

80. Following EPA's determination that Respondents have failed to comply with a requirement of this Settlement Agreement, EPA may give Respondents written notification of the same and describe the noncompliance. EPA may send Respondents a written demand for the payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified Respondents of a violation.

81. All penalties accruing under this Section shall be due and payable to EPA within 30 days of Respondents' receipt from EPA of a demand for payment of the penalties, unless Respondents invoke the dispute resolution procedures in accordance with Section XV (Dispute Resolution). Respondents shall make all payments required by this Paragraph to EPA by Fedwire Electronic Funds Transfer to:

Federal Reserve Bank of New York

ABA = 021030004

Account = 68010727

SWIFT Address = FRNYUS33

33 Liberty Street

New York, NY 10045

Field Tag 4200 of the Fedwire message should read "D 68010727 Environmental Protection Agency"

and shall indicate that the payment is for stipulated penalties, and shall reference the EPA Region and Site/Spill ID Number A4PY, and the EPA Docket Number for this action. At the time of payment, Respondents shall send notice that that payment has been made as provided in Paragraph 89.c.(1) below.

82. The payment of penalties shall not alter in any way Respondents' obligation to complete performance of the Work required under this Settlement Agreement.

83. Penalties shall continue to accrue as provided in Paragraph 79 during any dispute resolution period, but need not be paid until 30 days after the dispute is resolved by agreement or by receipt of EPA's decision.

84. If Respondents fail to pay stipulated penalties when due, EPA may institute proceedings to collect the penalties, as well as Interest. Respondents shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 81.

85. Nothing in this Settlement Agreement shall be construed as prohibiting, altering, or in any way limiting the ability of EPA to seek any other remedies or sanctions available by virtue of Respondents' violation of this Settlement Agreement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA, 42 U.S.C. § 9622(l), and punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3). Provided, however, that EPA shall not seek civil penalties pursuant to Section 122(l) of CERCLA or punitive damages pursuant to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is provided herein, except in the case of willful violation of this Settlement Agreement or in the event that EPA assumes performance of a portion or all of the Work pursuant to Section XX (Reservation of Rights by EPA), Paragraph 96. Notwithstanding any other provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Settlement Agreement.

XVII. FORCE MAJEURE

86. Respondents and Settling Federal Agency agree to perform all requirements of this Settlement Agreement within the time limits established under this Settlement Agreement, unless the performance is delayed by a *force majeure* or excused under an extension of time requested by the Respondents' project coordinator and approved by EPA. For purposes of this Settlement Agreement, *force majeure* is defined as any event arising from causes beyond the control of Respondents or Settling Federal Agency or of any entity controlled by Respondents or Settling Federal Agency, including but not limited to their contractors and subcontractors, which delays or prevents performance of any obligation under this Settlement Agreement despite Respondents' or Settling Federal Agency's best efforts to fulfill the obligation. *Force majeure* does not include financial inability to complete the Work or increased cost of performance.

87. If any event occurs or has occurred that may delay the performance of any obligation under this Settlement Agreement, whether or not caused by a *force majeure* event, Respondents or Settling Federal Agency shall notify EPA orally within 48 hours of when Respondents or Settling Federal Agency first knew that the event might cause a delay. Within 7 days thereafter, Respondents or Settling Federal Agency shall provide to EPA in writing an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Respondents' or Settling Federal Agency's rationale for attributing such delay to a *force majeure* event if they intend to assert such a claim; and a statement as to whether, in the opinion of Respondents or Settling Federal Agency, such event may cause or contribute to an endangerment to public health, welfare, or the environment. Failure to comply with the above requirements shall preclude Respondents or Settling Federal Agency from asserting any claim of *force majeure* for that event for the period of time of such failure to comply and for any additional delay caused by such failure.

88. If EPA agrees that the delay or anticipated delay is attributable to a *force majeure* event, the time for performance of the obligations under this Settlement Agreement that are affected by the *force majeure* event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the *force majeure* event shall not, of itself, extend the time for performance of any other obligation. EPA may, however, in its sole discretion, take such *force majeure* event into account in determining the appropriate time for performance of any subsequent obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a *force majeure* event, EPA will notify Respondents or Settling Federal Agency in writing of its decision. If EPA agrees that the delay is attributable to a *force majeure* event, EPA will notify Respondents or Settling Federal Agency in writing of the length of the extension, if any, for performance of the obligations affected by the *force majeure* event.

XVIII. PAYMENT OF RESPONSE COSTS

89. Payment of Past Response Costs.

a. Payments by Respondents. Within 45 days after the Effective Date, Respondents shall pay to EPA **\$1,000,044.18** for Past Response Costs. Payment shall be made to EPA by Fedwire Electronic Funds Transfer ("EFT") to:

Federal Reserve Bank of New York
ABA = 021030004
Account = 68010727
SWIFT Address = FRNYUS33
33 Liberty Street
New York, NY 10045
Field Tag 4200 of the Fedwire message should read "D 68010727
Environmental Protection Agency"

b. Payments on behalf of Settling Federal Agency. Within 45 days after the Effective Date, the United States on behalf of the Settling Federal Agency shall pay to EPA **\$142,907.18** for Past Response Costs. Payment shall be made to EPA by Fedwire Electronic Funds Transfer ("EFT") to:

Federal Reserve Bank of New York
ABA = 021030004
Account = 68010727
SWIFT Address = FRNYUS33
33 Liberty Street
New York, NY 10045
Field Tag 4200 of the Fedwire message should read "D 68010727
Environmental Protection Agency"

c. Payment Procedures. The **\$1,000,044.18** payment made to EPA pursuant to Paragraph 89.a above shall reference Site/Spill ID (SSID) numbers A4PY and A4K5, and the EPA docket number for this action. A portion of this payment consisting of \$250,000 will be deposited by EPA into the Armstrong World Industries Site, Operable Unit 2, Superfund Special Account (SSID number A4PY) to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the Hazardous Substance Superfund. The remaining \$750,044.18 of this payment shall be deposited by EPA into the Hazardous Substance Superfund (SSID number A4K5). The **\$142,907.18** payment made to EPA pursuant to Paragraph 89.b above shall reference Site/Spill ID number A4K5, and the EPA docket number for this action. This payment shall be deposited by EPA into the Hazardous Substance Superfund (SSID number A4K5).

(1). At the time of payment under Paragraphs 89.a and 89.b, Respondents and Settling Federal Agency shall send notice that payment has been made to Kevin Woodruff at woodruff.kevinl@epa.gov, Paula Painter at painter.paula@epa.gov, and to the EPA Cincinnati Finance Office by email at cinwd_acctsreceivable@epa.gov or by mail to:

EPA Cincinnati Finance Office
26 W. Martin Luther King Drive
Cincinnati, Ohio 45268

Such notice shall reference Site/Spill ID (SSID) Number A4PY and A4K5 and the EPA Docket Number for this action.

(2). Two hundred and fifty thousand dollars (\$250,000) of the total amount to be paid by Respondents and Settling Federal Agency pursuant to Paragraphs 89.a and 89.b shall be deposited by EPA in the Armstrong World Industries Site, Operable Unit 2, Superfund Special Account (SSID Number A4PY) to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the Hazardous Substance

Superfund. The remainder of the funds (\$892,951.36) received pursuant to Paragraphs 89.a and 89.b shall be deposited by EPA into the Hazardous Substance Superfund (SSID Number A4K5).

90. Payments of Future Response Costs.

a. Respondents shall pay EPA all Future Response Costs not inconsistent with the NCP. On a periodic basis, EPA will send Respondents and Settling Federal Agency a bill requiring payment that includes a SCORPIOS Report, which includes direct and indirect costs incurred by EPA, its contractors, and the Department of Justice. The United States on behalf of Settling Federal Agency shall pay its allocated share of Future Response Costs to Respondents in accordance with the Confidential Site Participation Agreement within 45 days of receipt of each bill for Future Response Costs. Respondents shall make all payments within 75 days of receipt of each bill requiring payment, except as otherwise provided in Paragraph 92 of this Settlement Agreement. Payments shall be made to EPA by Fedwire Electronic Funds Transfer ("EFT") to:

Federal Reserve Bank of New York
ABA = 021030004
Account = 68010727
SWIFT Address = FRNYUS33
33 Liberty Street
New York, NY 10045
Field Tag 4200 of the Fedwire message should read "D 68010727 Environmental Protection Agency"

and shall reference the Site/Spill ID Number A4PY and the EPA Docket Number for this action.

b. At the time of payment, Respondents shall send notice that payment has been made to Kevin Woodruff at woodruff.kevinl@epa.gov, Paula Painter at painter.paula@epa.gov, and to the EPA Cincinnati Finance Office by email at cinwd_acctsreceivable@epa.gov or by mail to

EPA Cincinnati Finance Office
26 W. Martin Luther King Drive
Cincinnati, Ohio 45268

Such notice shall reference Site/Spill ID Number A4PY and the EPA Docket Number for this action.

c. The total amount to be paid to EPA by Respondents pursuant to Paragraph 90.a shall be deposited by EPA in the Armstrong World Industries Site, Operable Unit 2, Superfund Special Account to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the Hazardous Substance Superfund, provided, however, that EPA may deposit a Future Response Costs payment directly into the EPA Hazardous Substance Superfund if, at the time the payment is received, EPA estimates that

the Armstrong World Industries Site, Operable Unit 2, Superfund Special Account balance is sufficient to address currently anticipated future response actions to be conducted or financed by EPA at or in connection with the Site.

91. Interest. If Respondents or the United States on behalf of Settling Federal Agency do not pay their respective share of Past Response Costs specified under Paragraph 89.a and 89.b respectively within 45 days after the Effective Date the non-performing parties shall pay Interest on their share of the unpaid balance. The interest to be paid on Past Response Costs shall begin to accrue on the Effective Date and shall continue to accrue until the date of payment. If Respondents do not pay Future Response Costs within 75 days after receipt of each bill, Respondents shall pay Interest on the unpaid balance. The Interest on unpaid Future Response Costs shall begin to accrue on the date of the bill and shall continue to accrue until the date of payment. If EPA receives a partial payment, Interest shall accrue on any unpaid balance. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the United States (not including Settling Federal Agency) by virtue of Respondents' and/or Settling Federal Agency's failure to make timely payments under this Section, including but not limited to, payments of stipulated penalties pursuant to Section XVI. Respondents and Settling Federal Agency shall make all payments required by this Paragraph in the manner described in Paragraphs 89 and 90.

92.(a) Respondents may contest payment of any Future Response Costs billed under Paragraph 90 if they determine that EPA has made a mathematical error or included a cost item that is not within the definition of Future Response Costs, or if they believe EPA incurred excess costs as a direct result of an EPA action that was inconsistent with a specific provision or provisions of the NCP. Such objection shall be made in writing within 30 days after receipt of the bill and must be sent to the EPA Project Coordinator. Any such objection shall specifically identify the contested Future Response Costs and the basis for objection. In the event of an objection, Respondents shall pay all uncontested Future Response Costs to EPA in the manner and within the 75 day period described in Paragraph 90. Simultaneously, Respondents shall establish, in a duly chartered bank or trust company, an interest-bearing escrow account that is insured by the Federal Deposit Insurance Corporation and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. Respondents shall send to the EPA Project Coordinator a copy of the transmittal letter and check paying the uncontested Future Response Costs, and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. Simultaneously with establishment of the escrow account, Respondents shall initiate the Dispute Resolution procedures in Section XV (Dispute Resolution). If EPA prevails in the dispute, within 5 days after the resolution of the dispute, Respondents shall pay the sums due (with accrued interest) to EPA in the manner described in Paragraph 90. If Respondents prevail concerning any aspect of the contested costs, Respondents shall pay that portion of the costs (plus associated accrued interest) for which they did not prevail to EPA in the manner described in Paragraph 90. Respondents shall be disbursed any balance of the escrow account. The dispute resolution procedures set forth in this Paragraph in conjunction

with the procedures set forth in Section XV (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding Respondents' obligation to reimburse EPA for its Future Response Costs.

(b) Payments on behalf of Settling Federal Agency. The United States, on behalf of Settling Federal Agency, shall make direct payment to EPA in the amount of \$142,907.18 for Past Response Costs as specified in Paragraph 89.b. The United States on behalf of Settling Federal Agency shall make payments to Respondents for Settling Federal Agency's allocated share of Future Response Costs and response costs related to the Work, in accordance with Paragraph 39 of this Settlement Agreement and as provided in the Confidential Site Participation Agreement.

XIX. COVENANT NOT TO SUE BY EPA

93.(a) In consideration of the actions that will be performed and the payments that will be made by Respondents under the terms of this Settlement Agreement, and except as provided in Section XX (Reservation of Rights by EPA), EPA covenants not to sue or to take administrative action against Respondents pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the Work, Past Response Costs, and Future Response Costs. This covenant not to sue shall take effect upon the Effective Date. This covenant not to sue is conditioned upon the complete and satisfactory performance by Respondents of their obligations under this Settlement Agreement. This covenant not to sue extends only to Respondents and does not extend to any other person.

(b) Covenant for Settling Federal Agency by EPA. Except as provided in Section XX (Reservation of Rights by EPA), EPA covenants not to take administrative action against Settling Federal Agency pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the Work and Past Response Costs and Future Response Costs. This covenant shall take effect upon the Effective Date. This covenant is conditioned upon the complete and satisfactory performance by Settling Federal Agency of its obligations under this Settlement Agreement. This covenant extends only to Settling Federal Agency and does not extend to any other person.

XX. RESERVATIONS OF RIGHTS BY EPA

94. Except as specifically provided in this Settlement Agreement, nothing herein shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing herein shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Settlement Agreement, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring Respondents or Settling Federal Agency in the future to perform additional activities pursuant to CERCLA or any other applicable law.

95. The covenant not to sue set forth in Section XIX above does not pertain to any matters other than those expressly identified therein. EPA reserves, and this Settlement Agreement is without prejudice to, all rights against Respondents and Settling Federal Agency with respect to all other matters, including, but not limited to:

- a. liability for failure by Respondents or Settling Federal Agency to meet a requirement of this Settlement Agreement;
- b. liability for costs not included within the definitions of Past Response Costs or Future Response Costs;
- c. liability for performance of response action other than the Work;
- d. criminal liability;
- e. liability for violations of federal or state law that occur during or after implementation of the Work;
- f. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;
- g. liability arising from the past, present, or future disposal, release or threat of release of Waste Materials outside of the Site; and
- h. liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry related to the Site not paid as Future Response Costs under this Settlement Agreement.

96. Work Takeover. In the event EPA determines that Respondents have ceased implementation of any portion of the Work, are seriously or repeatedly deficient or late in their performance of the Work, or are implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA may assume the performance of all or any portion of the Work as EPA determines necessary. Respondents may invoke the procedures set forth in Section XV (Dispute Resolution) to dispute EPA's determination that takeover of the Work is warranted under this Paragraph. Costs incurred by EPA in performing the Work pursuant to this Paragraph shall be considered Future Response Costs that Respondents and the United States on behalf of Settling Federal Agency shall pay pursuant to Section XVIII (Payment of Response Costs). Notwithstanding any other provision of this Settlement Agreement, EPA retains all authority and reserves all rights to take any and all response actions authorized by law.

XXI. COVENANT NOT TO SUE BY RESPONDENTS AND SETTling FEDERAL AGENCY

97.(a) Covenants by Respondents. Respondents covenant not to sue and agree not to assert any claims or causes of action against the United States (not including Settling Federal Agency), or its contractors or employees, with respect to the Work, Past Response Costs, Future Response Costs, or this Settlement Agreement, including, but not limited to:

i. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund established by 26 U.S.C. § 9507, based on Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;

ii. any claim arising out of the Work or arising out of the response actions for which the Past Response Costs or Future Response Costs have or will be incurred, including any claim under the United States Constitution, the Georgia Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, or at common law; or

iii. any claim pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, Section 7002(a) of RCRA, 42 U.S.C. § 6972(a), or state law relating to the Work or payment of Past Response Costs or Future Response Costs.

(b) Covenant by Settling Federal Agency. Settling Federal Agency agrees not to assert any direct or indirect claim for reimbursement from the EPA Hazardous Substance Superfund through CERCLA Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law with respect to the Work, Past Response Costs, Future Response Costs, and this Settlement Agreement.

98. These covenants not to sue shall not apply in the event the United States (not including Settling Federal Agency) brings a cause of action or issues an order pursuant to the reservations set forth in Section XX (Reservation of Rights by EPA), other than in Paragraph 95.a (liability for failure to meet a requirement of the Settlement Agreement) or 95.d (criminal liability), but only to the extent that Respondents' or Settling Federal Agency's claims arise from the same response action, response costs, or damages that the United States (not including Settling Federal Agency) is seeking pursuant to the applicable reservation.

99.(a) Reservation of Rights by Respondents. Respondents reserve, and this Settlement Agreement is without prejudice to, claims against the United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, and brought pursuant to any statute other than CERCLA or RCRA and for which the waiver of sovereign immunity is found in a statute other than CERCLA or RCRA, for money damages for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any employee of the United States, as that term is defined in 28 U.S.C. § 2671, while acting within the scope of his or her office or employment under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred. However, the foregoing shall not include any claim based on EPA's selection of response

actions, or the oversight or approval of Respondents' plans, reports, other deliverables, or activities.

(b) Except as otherwise provided in Paragraph 4, Respondents reserve all rights they may have to oppose and defend against any and all claims and actions asserted by EPA pursuant to Paragraphs 94 and 95 hereof, and nothing set forth in this Settlement Agreement shall preclude Respondents from asserting any defense in any civil action by EPA to enforce this Settlement Agreement.

(c) Respondents reserve their rights to challenge any arguments and costs referred to in Paragraph 100.

100. Reservation of Rights by Settling Federal Agency. Settling Federal Agency asserts that the U.S. Army Corps of Engineers incurred more than \$1.26 million in costs relating to site investigation work at the Site. Settling Federal Agency reserves its right to cite and rely on those expenditures in connection with equitable arguments regarding its allocation of responsibility for response costs at the Site.

101. Nothing in this Agreement shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

XXII. OTHER CLAIMS

102. By issuance of this Settlement Agreement, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondents or Settling Federal Agency.

103. Except as expressly provided in Section XIX (Covenant Not to Sue by EPA), nothing in this Settlement Agreement constitutes a satisfaction of or release from any claim or cause of action against Respondents and Settling Federal Agency, or any person not a party to this Settlement Agreement, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States for costs, damages and interest under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.

104. No action or decision by EPA pursuant to this Settlement Agreement shall give rise to any right to judicial review except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

XXIII. EFFECT OF SETTLEMENT/CONTRIBUTION

105. Nothing in this Settlement Agreement shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Settlement Agreement. Except as provided in Section XXI (Covenant Not to Sue by Respondents and Settling Federal Agency), each of the Parties expressly reserves any and all rights (including, but not limited to, pursuant to

Section 113 of CERCLA, 42 U.S.C. § 9613), defenses, claims, demands, and causes of action which each Party may have with respect to any matter, transaction, or occurrence relating in any way to the Site against any person not a Party hereto. Nothing in this Settlement Agreement diminishes the right of the United States, pursuant to Section 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2) and (3), to pursue any such persons to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

106. The Parties agree that this Settlement Agreement constitutes an administrative settlement pursuant to which each Respondent and Settling Federal Agency has, as of the Effective Date, resolved liability to the United States within the meaning of Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), and is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, or as may be otherwise provided by law, for the "matters addressed" in this Settlement Agreement. The "matters addressed" in this Settlement Agreement are the Work, Past Response Costs, and Future Response Costs.

107. The Parties further agree that this Settlement Agreement constitutes an administrative settlement pursuant to which each Respondent and Settling Federal Agency has, as of the Effective Date, resolved liability to the United States within the meaning of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B).

108. Each Respondent and Settling Federal Agency shall, with respect to any suit or claim brought by it for matters related to this Settlement Agreement, notify EPA in writing no later than 60 days prior to the initiation of such suit or claim. Each Respondent and Settling Federal Agency also shall, with respect to any suit or claim brought against it for matters related to this Settlement Agreement, notify EPA in writing within 10 days after service of the complaint or claim upon it. In addition, each Respondent and Settling Federal Agency shall notify EPA within 10 days after service or receipt of any Motion for Summary Judgment and within 10 days after receipt of any order from a court setting a case for trial, for matters related to this Settlement Agreement.

109. In any subsequent administrative or judicial proceeding initiated by EPA, or by the United States on behalf of EPA, for injunctive relief, recovery of response costs, or other relief relating to the Site, Respondents shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the covenant by EPA set forth in Section XX.

110. Effective upon signature of this Settlement Agreement by a Respondent and Settling Federal Agency, such Respondent and Settling Federal Agency agree that the time period commencing on the date of its signature and ending on the date EPA receives from such Respondent or the United States on behalf of Settling Federal Agency the payment(s) required by

Section XVIII (Payment of Response Costs) and, if any, Section XVI (Stipulated Penalties) shall not be included in computing the running of any statute of limitations potentially applicable to any action brought by the United States related to the "matters addressed" as defined in Paragraph 106 and that, in any action brought by the United States related to the "matters addressed," such Respondent or Settling Federal Agency will not assert, and may not maintain, any defense or claim based upon principles of statute of limitations, waiver, laches, estoppel, or other defense based on the passage of time during such period. If EPA gives notice to Respondents or Settling Federal Agency that it will not make this Settlement Agreement effective, the statute of limitations shall begin to run again commencing ninety days after the date such notice is sent by EPA.

XXIV. INDEMNIFICATION

111.a. For purposes of this Paragraph "Respondents" shall mean Armstrong World Industries; Honeywell International Inc.; Reynolds Metals Company, LLC; and The Unimax Corp. Respondents shall indemnify, save and hold harmless the United States (not including Settling Federal Agency), its officials, agents, contractors, subcontractors, employees, and representatives from any and all claims or causes of action arising from, or on account of negligent or other wrongful acts or omissions of Respondents, their officers, directors, employees, agents, contractors, subcontractors, and representatives in carrying out actions pursuant to this Settlement Agreement. In addition, Respondents agree to pay the United States (not including Settling Federal Agency) all costs incurred by the United States (not including Settling Federal Agency), including but not limited to attorney's fees and other expenses of litigation and settlement, arising from or on account of claims made against the United States (not including Settling Federal Agency) based on negligent or other wrongful acts or omissions of Respondents, their officers, directors, employees, agents, contractors, subcontractors and any persons acting on their behalf or under their control in carrying out activities pursuant to this Settlement Agreement. The United States (not including Settling Federal Agency) shall not be held out as a party to any contract entered into by or on behalf of Respondents in carrying out activities pursuant to this Settlement Agreement. Neither Respondents nor any such contractor shall be considered an agent of the United States (not including Settling Federal Agency).

b. For purposes of this Paragraph "Respondents" shall mean Macon-Bibb County, and Macon Water Authority. To the extent allowed by the laws of the State of Georgia, Respondents shall indemnify, save and hold harmless the United States (not including Settling Federal Agency), its officials, agents, contractors, subcontractors, employees, and representatives from any and all claims or causes of action arising from, or on account of negligent or other wrongful acts or omissions of Respondents, their officers, directors, employees, agents, contractors, subcontractors, and representatives in carrying out actions pursuant to this Settlement Agreement. In addition, to the extent allowed by the laws of the State of Georgia, Respondents agree to pay the United States (not including Settling Federal Agency) all costs incurred by the United States (not including Settling Federal Agency), including but not limited to attorney's fees and other expenses of litigation and settlement, arising from or on account of claims made against the United States (not including Settling Federal Agency) based on negligent or other

wrongful acts or omissions of Respondents, their officers, directors, employees, agents, contractors, subcontractors and any persons acting on their behalf or under their control in carrying out activities pursuant to this Settlement Agreement. The United States (not including Settling Federal Agency) shall not be held out as a party to any contract entered into by or on behalf of Respondents in carrying out activities pursuant to this Settlement Agreement. Neither Respondents nor any such contractor shall be considered an agent of the United States (not including Settling Federal Agency).

112. The United States (not including Settling Federal Agency) shall give Respondents notice of any claim for which the United States (not including Settling Federal Agency) plans to seek indemnification pursuant to this Section and shall consult with Respondents prior to settling such claim.

113. Respondents waive all claims against the United States (not including Settling Federal Agency) for damages or reimbursement or for set-off of any payments made or to be made to the United States (not including Settling Federal Agency), arising from or on account of any contract, agreement, or arrangement between any one or more of Respondents and any person for performance of Work on or relating to the Site. In addition, Respondents shall indemnify and hold harmless the United States (not including Settling Federal Agency) with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between any one or more of Respondents and any person for performance of Work on or relating to the Site.

XXV. INSURANCE

114. At least 10 days prior to commencing any on-Site Work under this Settlement Agreement, Respondents shall secure, and shall maintain for the duration of this Settlement Agreement, commercial general liability insurance and automobile insurance with limits of \$1,000,000, combined single limit, naming the EPA as an additional insured with respect to all liability arising out of the activities performed by or on behalf of Respondents pursuant to this Settlement Agreement. Within the same period, Respondents shall provide EPA with certificates of such insurance and a copy of each insurance policy. Respondents shall submit such certificates and copies of policies each year on the anniversary of the Effective Date. In addition, for the duration of the Settlement Agreement, Respondents shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Respondents in furtherance of this Settlement Agreement. If Respondents demonstrate by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then Respondents need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

XXVI. FINANCIAL ASSURANCE

115. Within 90 days after the Effective Date, Respondents shall establish and maintain financial security for the benefit of EPA in the amount of \$1,000,000 in one or more of the following forms, in order to secure the full and final completion of Work by Respondents:

- a. a surety bond unconditionally guaranteeing payment and/or performance of the Work;
- b. one or more irrevocable letters of credit, payable to or at the direction of EPA, issued by financial institution(s) acceptable in all respects to EPA equaling the total estimated cost of the Work;
- c. a trust fund administered by a trustee acceptable in all respects to EPA;
- d. a policy of insurance issued by an insurance carrier acceptable in all respects to EPA, which ensures the payment and/or performance of the Work;
- e. a written guarantee to pay for or perform the Work provided by one or more parent companies of Respondents, or by one or more unrelated companies that have a substantial business relationship with at least one of Respondents, including a demonstration that any such guarantor company satisfies the financial test requirements of 40 C.F.R. Part 264.143(f); and/or
- f. a demonstration of sufficient financial resources to pay for the Work made by one or more of Respondents, which shall consist of a demonstration that any such Respondent satisfies the requirements of 40 C.F.R. Part 264.143(f).

116. Any and all financial assurance instruments provided pursuant to this Section shall be in form and substance satisfactory to EPA, determined in EPA's sole discretion. In the event that EPA determines at any time that the financial assurances provided pursuant to this Section (including, without limitation, the instrument(s) evidencing such assurances) are inadequate, Respondents shall, within 30 days after receipt of notice of EPA's determination, obtain and present to EPA for approval one of the other forms of financial assurance listed in Paragraph 115 above. In addition, if at any time EPA notifies Respondents that the anticipated cost of completing the Work has increased, then, within 30 days of such notification, Respondents shall obtain and present to EPA for approval a revised form of financial assurance (otherwise acceptable under this Section) that reflects such cost increase. Respondents' inability to demonstrate financial ability to complete the Work shall in no way excuse performance of any activities required under this Settlement Agreement.

117. If Respondents seek to ensure completion of the Work through a guarantee pursuant to Paragraph 115.e. or 115.f. of this Settlement Agreement, Respondents shall (i) demonstrate to EPA's satisfaction that the guarantor satisfies the requirements of 40 C.F.R. Part 264.143(f); and (ii) resubmit sworn statements conveying the information required by 40 C.F.R. Part 264.143(f)

annually, on the anniversary of the Effective Date, or such other date as agreed by EPA, to EPA. For the purposes of this Settlement Agreement, wherever 40 C.F.R. Part 264.143(f) references "sum of current closure and post-closure costs estimates and the current plugging and abandonment costs estimates," the dollar amount to be used in the relevant financial test calculations shall be the current cost estimate of \$1,000,000 for the Work at the Site plus any other RCRA, CERCLA, TSCA, or other federal environmental obligations financially assured by the relevant Respondent or guarantor to EPA by means of passing a financial test.

118. If, after the Effective Date, Respondents can show that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 115 of this Section, Respondents may, on any anniversary date of the Effective Date, or at any other time agreed to by the Parties, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining Work to be performed. Respondents shall submit a proposal for such reduction to EPA, in accordance with the requirements of this Section, and may reduce the amount of the security after receiving written approval from EPA. In the event of a dispute, Respondents may seek dispute resolution pursuant to Section XV (Dispute Resolution). Respondents may reduce the amount of security in accordance with EPA's written decision resolving the dispute.

119. Respondents may change the form of financial assurance provided under this Section at any time, upon notice to and prior written approval by EPA, provided that EPA determines that the new form of assurance meets the requirements of this Section. In the event of a dispute, Respondents may change the form of the financial assurance only in accordance with the written decision resolving the dispute.

XXVII. INTEGRATION/APPENDICES

120. This Settlement Agreement and its appendices and any deliverables, technical memoranda, specifications, schedules, documents, plans, reports (other than progress reports), etc. that will be developed pursuant to this Settlement Agreement and become incorporated into and enforceable under this Settlement Agreement constitute the final, complete and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement Agreement. The Parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Settlement Agreement. The following appendices are attached to and incorporated into this Settlement Agreement:

"Appendix A" is the SOW.

"Appendix B" is the map of the Site.

"Appendix C" is the List of Respondents.

XXVIII. PUBLIC COMMENT

121. Final acceptance by EPA of the Past Response Costs compromise included in this settlement shall be subject to Section 122(i) of CERCLA, 42 U.S.C. § 9622(i), which requires EPA to publish notice of the proposed settlement in the Federal Register, to provide persons who are not parties to the proposed settlement an opportunity to comment, solely, on the cost recovery component of the settlement, and to consider comments filed in determining whether to consent to the proposed settlement. EPA may withhold consent from, or seek to modify, all or part of Section XVIII (Payment of Response Costs) of this Settlement Agreement if comments received disclose facts or considerations that indicate that Section XVIII of this Settlement is inappropriate, improper, or inadequate. Otherwise, Section XVIII shall become effective when EPA issues notice to Respondents and Settling Federal Agency that public comments received, if any, do not require EPA to modify or withdraw from Section XVIII of this Settlement Agreement.

XXIX. ADMINISTRATIVE RECORD

122. EPA will determine the contents of the administrative record file for selection of the remedial action. Respondents shall submit to EPA documents developed during the course of the RI/FS upon which selection of the response action may be based. Upon request of EPA, Respondents shall provide copies of plans, task memoranda for further action, quality assurance memoranda and audits, raw data, field notes, laboratory analytical reports, and other reports. Upon request of EPA, Respondents shall additionally submit any previous studies conducted under state, local, or other federal authorities relating to selection of the response action, and all communications between Respondents and state, local, or other federal authorities concerning selection of the response action. At EPA's discretion, Respondents shall establish a community information repository at or near the Site, to house one copy of the administrative record.

XXX. ATTORNEY GENERAL APPROVAL

123. The Attorney General or his designee has approved the response cost settlement embodied in this Settlement Agreement in accordance with Section 122(h)(1) of CERCLA, 42 U.S.C. § 9622(h)(1).

XXXI. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION

124. This Settlement Agreement shall be effective upon signature by the Chief, Superfund Restoration and Sustainability Branch, Superfund Division, U.S. Environmental Protection Agency, Region 4, or his/her delegate, with the exception of the Past Response Cost compromise included in this Settlement Agreement, which shall be effective when EPA issues notice to Respondents and Settling Federal Agency that public comments received, if any, do not require EPA to modify or withdraw from the Past Response Cost compromise included within this Settlement Agreement.

125. This Settlement Agreement may be amended by mutual agreement of EPA and Respondents and Settling Federal Agency. Amendments shall be in writing and shall be effective when signed by EPA. EPA Project Coordinators do not have the authority to sign amendments to the Settlement Agreement.

126. No informal advice, guidance, suggestion, or comment by the EPA Project Coordinator or other EPA representatives regarding reports, plans, specifications, schedules, or any other writing submitted by Respondents or Settling Federal Agency shall relieve Respondents or Settling Federal Agency of their obligation to obtain any formal approval required by this Settlement Agreement, or to comply with all requirements of this Settlement Agreement, unless it is formally modified.

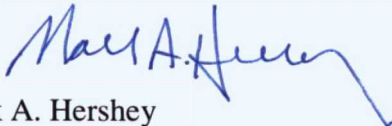
XXXII. NOTICE OF COMPLETION OF WORK

127. When EPA determines that all Work has been fully performed in accordance with this Settlement Agreement, with the exception of any continuing obligations required by this Settlement Agreement, including but not limited to payment of Future Response Costs or record retention, EPA will provide written notice to Respondents and Settling Federal Agency. If EPA determines that any such Work has not been completed in accordance with this Settlement Agreement, EPA will notify Respondents, provide a list of the deficiencies, and require that Respondents modify the RI/FS Work Plan if appropriate in order to correct such deficiencies, in accordance with Paragraph 47 (Modification of the RI/FS Work Plan). Failure by Respondents to implement the approved modified RI/FS Work Plan shall be a violation of this Settlement Agreement.

In the Matter of the Armstrong World Industries Superfund Site, Operable Unit 2
Macon, Macon-Bibb County, Georgia
Administrative Settlement Agreement and Order on Consent for Remedial
Investigation/Feasibility Study

Agreed this 22nd day of August, 2018.

For Respondent Armstrong World Industries, Inc.

By: 

Mark A. Hershey

Title: SVP, General Counsel

In the Matter of the Armstrong World Industries Superfund Site, Operable Unit 2
Macon, Macon-Bibb County, Georgia
Administrative Settlement Agreement and Order on Consent for Remedial
Investigation/Feasibility Study

Agreed this 7 day of Sept., 2018.

For Respondent Macon-Bibb County

By: _____

Robert A. B. Reichert

Robert A. B. Reichert

Title: Mayor _____

In the Matter of the Armstrong World Industries Superfund Site, Operable Unit 2
Macon, Macon-Bibb County, Georgia
Administrative Settlement Agreement and Order on Consent for Remedial
Investigation/Feasibility Study

Agreed this 16th day of August, 2018.

For Respondent Macon Water Authority

By: Robert A. Rojas (Robert A. Rojas)

Title: Executive Director/President

In the Matter of the Armstrong World Industries Superfund Site, Operable Unit 2
Macon, Macon-Bibb County, Georgia
Administrative Settlement Agreement and Order on Consent for Remedial
Investigation/Feasibility Study

Agreed this 21 day of August, 2018.

For Respondent Honeywell International Inc.

By: John J. Morris
John J. Morris

Title: Global Remediation Director

In the Matter of the Armstrong World Industries Superfund Site, Operable Unit 2
Macon, Macon-Bibb County, Georgia
Administrative Settlement Agreement and Order on Consent for Remedial
Investigation/Feasibility Study

Agreed this 23 day of August, 2018.

For Respondent ~~Reynolds~~ Reynolds Metals Company, LLC

By: 

Name: Robert S. Bear

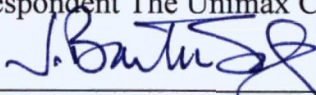
Title: Vice President

In the Matter of the Armstrong World Industries Superfund Site, Operable Unit 2
Macon, Macon-Bibb County, Georgia
Administrative Settlement Agreement and Order on Consent for Remedial
Investigation/Feasibility Study

Agreed this 21st day of August, 2018.

For Respondent The Unimax Corporation

By: _____


J. Barton Seitz, Partner
Baker Botts, L.L.P.

Title: Counsel for The Unimax Corporation

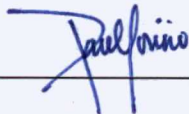
In the Matter of the Armstrong World Industries Superfund Site, Operable Unit 2
Macon, Macon-Bibb County, Georgia
Administrative Settlement Agreement and Order on Consent for Remedial
Investigation/Feasibility Study

Agreed this 6th day of September, 2018.

For United States Department of Defense, as described in 10 U.S.C. § 111, and its successor
departments, agencies, or instrumentalities.


JEFFREY H. WOOD
Acting Assistant Attorney General
Environment and Natural Resources Division

By: _____

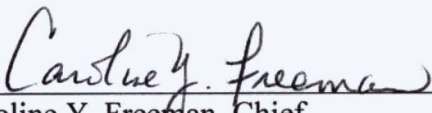


PAUL CIRINO
Senior Trial Counsel
United States Department of Justice
Environmental Defense Section

It is so ORDERED AND AGREED,

By: 
Maurice L. Horsey, IV, Chief
Enforcement & Community Engagement Branch
Superfund Division
U.S. Environmental Protection Agency, Region 4

Date: 9/18/18

By: 
Caroline Y. Freeman, Chief
Restoration and Sustainability Branch
Superfund Division
U.S. Environmental Protection Agency, Region 4

Date: 9/18/2018

EFFECTIVE DATE: 9/18/2018

APPENDIX A

Statement of Work

STATEMENT OF WORK

FOR A REMEDIAL INVESTIGATION, FEASIBILITY STUDY AND BASELINE RISK ASSESSMENT FOR ARMSTRONG WORLD INDUSTRIES SUPERFUND SITE, OPERABLE UNIT TWO (OU2) (GAN000410033) MACON, GEORGIA

I. PURPOSE

The purpose of this remedial investigation / feasibility study (RI/FS) is to investigate the nature and extent of contamination at Operable Unit Two (OU2) of the Armstrong World Industries Site (the "Site"), Macon, Macon-Bibb County, Georgia, assess the potential risk to human health and the environment, and develop and evaluate potential remedial alternatives. The RI and FS are interactive and may be conducted concurrently so that the data collected in the RI influences the development of remedial alternatives in the FS, which in turn affects the data needs and the scope of treatability studies. The Site includes any area where hazardous substances, pollutants or contaminants from former operations or disposal activities have, may have, or will come to be located.

The RI Report shall fully evaluate the nature and extent of releases of hazardous substances, pollutants or contaminants at the Site. The RI Report and Baseline Risk Assessment (BLRA) shall assess the risk which these hazardous substances, pollutants or contaminants present for human health and the environment. The RI Report shall provide sufficient data to develop and evaluate remedial alternatives. The FS Report shall evaluate alternatives for addressing the impact to human health and the environment from hazardous substances, pollutants, or contaminants at the Site. The RI, FS, and BLRA shall provide sufficient data to support remedy selection.

The Respondents shall conduct the RI and FS and prepare the RI and FS Reports, a Baseline Risk Assessment Report (including both human health and ecological baseline risk assessments), that are in accordance with the Site Administrative Settlement Agreement and Order on Consent for RI/FS (AOC), this Statement of Work (SOW), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 C.F.R. Part 300), as amended, and all requirements and guidance for RI/FS and risk assessment studies and reports, including but not limited to *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (EPA/540/G-89/004, October 1988) (RI/FS Guidance), *Risk Assessment Guidance for Superfund(RAGS): Volume I-Human Health Evaluation Manual (Part A), Interim Final* (December 1989), *RAGS: Volume II-Environmental Evaluation Manual, Interim Final* (March 1989), and other guidance used by the EPA in conducting an RI, FS, and BLRA (the primary guidance are listed in Attachment A). The RI and FS are interactive and shall be conducted concurrently so that the data collected in the RI supplements the body of existing data gathered through prior investigations of the Site and the adjacent OU1 area and the MNOP Site, and influences the development of Remedial Action Alternatives in the FS, which in turn affects the data needs and the scope of Treatability Studies that may be warranted.

The Respondents shall furnish all necessary personnel, materials, and services needed, or incidental to, performing the RI/FS and BLRA, except as otherwise specified in the Administrative Order.

At the completion of the RI/FS and BLRA, the U.S. Environmental Protection Agency (EPA) shall be responsible for the selection of a remedy to be implemented for the Site. The EPA will document the selection of a remedy in a Record of Decision (ROD). The remedy selected by the EPA will meet the cleanup standards specified in §121 of CERCLA, as amended by SARA. That is, the selected remedial action will be protective of human health and the environment, will be cost-effective, will utilize permanent solutions, alternative treatment technologies and resource recovery technologies to the maximum extent practicable, will be in compliance with, or include a waiver of, applicable or relevant and appropriate requirements of other laws or regulations, and will address the statutory preference for on-site treatment which permanently and significantly reduces the volume, toxicity, or mobility of the hazardous substances, pollutants, and contaminants as a principal element. The Final Remedial Investigation Report, Feasibility Study Report and Baseline Risk Assessment, as adopted by the EPA, with the remainder of the Administrative Record, will form the basis for the selection of the remedy to be implemented for the Site and will provide the information necessary to support the development of the ROD.

As specified in §104(a)(1) of CERCLA, as amended by SARA, the EPA, with assistance from the Georgia Environmental Protection Division (GAEPD), provides oversight of the Respondents' activities throughout the RI/FS, including field activities. The Respondents shall support EPA's initiation and conduct of activities related to the implementation of oversight activities. However, the primary responsibility for conducting an adequate RI/FS to enable and support the selection of a remedy shall lie with the Respondents. The EPA review and approval of deliverables is a tool to assist this process and to satisfy, in part, the EPA's responsibility to provide effective protection of public health, welfare, and the environment. The EPA's approval of a task or deliverable shall not be a guarantee as to the ultimate adequacy of such task or deliverable. A summary of the major deliverables that Respondents shall submit for the RI/FS is attached (Attachment B). In addition, a general schedule of RI/FS activities is also attached (Attachment C). Any dates or deadlines specified herein may be revised upon written approval by EPA.

II. DOCUMENT REVIEW

The Respondents shall submit two hardcopies and one electronic copy of all documents or deliverables required as part of this SOW, to both the EPA and GAEPD, for review and approval by EPA in consultation with GAEPD. After review of any plan, report or other item which is required to be submitted for approval pursuant to the AOC, the EPA, in consultation with GAEPD, may:

- (a) Approve, in whole or in part, the submission;
- (b) Approve the submission upon specified conditions;
- (c) Modify the submission to cure the deficiencies;
- (d) Disapprove, in whole or in part, the submission, directing that Respondents modify the submission; or
- (e) Any combination of the above.

However, the EPA will not modify a submission without first providing Respondents at least one notice of deficiency and opportunity to cure within a time frame specified in the notice. (See Section X of the AOC for procedures concerning the EPA Approval of Plans and Other Submissions.)

III. SCOPE

The preliminary **objectives of the RI/FS** for the Site have been determined, based on available information, to be the following:

1. Collect sufficient environmental data to support the BLRA and selection of a remedy.
2. For each known or potential contaminant source area, determine whether a release to the environment of hazardous substances, pollutants or contaminants has occurred, as defined by the NCP, and determine the nature and extent of contamination associated with any such releases.
3. Based on operational history, disposal history, spill records, observation, sampling results, or other means of detection, identify all additional releases or threatened releases of hazardous substances, pollutants or contaminants to the environment.
4. Determine the nature and spatial extent of contamination in all media including air, ground water, soil, surface water, and sediment.
5. Identify active releases and imminent releases of hazardous substances which may warrant Removal Actions.
6. Identify opportunities for source control measures, early remedial actions and removal actions.
7. Identify all Federal and State applicable or relevant and appropriate requirements (ARARs).
8. Identify human and ecological receptors for all media. Conduct a well survey within a three mile radius of the Site including water uses, well construction methods used, the number and age of users, and the volume and rate of water usage. Conduct a surface water use survey of Rocky Creek from Houston Road to the Ocmulgee River including human and ecological receptors. Delineate wetlands from Houston Road to the Ocmulgee River. The means and methods of conducting the surface water survey and wetland delineation (e.g., desktop or field surveys) will be described in the applicable Work Plans.
9. Refine, in consultation with the EPA and GAEPD, the Remedial Action Objectives for the Site.
10. Identify and screen potential treatment technologies along with containment and disposal requirements for residual or untreated impacted media.
11. Develop a full range of Remedial Action Alternatives and screen alternatives.
12. Conduct bench or pilot Treatability Studies, as necessary, to support evaluation of remedial alternatives.
13. Provide detailed analysis and comparison of Remedial Action Alternatives.

The **Site Management Strategy** for the Site includes the following:

1. A complete investigation of the Site including any and all off-site areas where hazardous substances, pollutants or contaminants from the Site have, may have, or will come to be located.
2. Identification of other Potentially Responsible Parties, if applicable.
3. EPA oversight, in consultation with GAEPD, of the Respondents' conduct of the work (i.e., the RI/FS and any response action) to ensure compliance with applicable laws, regulations and guidance and to ensure that the work proceeds in a timely fashion.
4. Respondents preparation of the Baseline Risk Assessment.
5. EPA management of the Remedy Selection and Record of Decision phase with input from state agencies, Natural Resource Trustees and the public (including the Respondents).

The **preliminary objectives for the Remedial Action** at the Site, based on currently available information [see Chapter 4 of *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA* (EPA/540/G-89/004, October 1988)] are:

- Return the groundwater to its beneficial uses, wherever practicable, within a reasonable time frame, except where beneficial uses are restricted by means acceptable to EPA;
- To the extent attributable to the Site, return the surface water, surface water sediments and associated wetlands, to their beneficial use, including ecological uses;
- Prevent exposure to contaminated groundwater, surface water, soils, subsurface soil, and sediments above acceptable human health and ecological risk levels;
- Eliminate or otherwise control sources of contamination at or from the Site;
- Prevent or minimize further migration of contaminants in all media;
- Treat or eliminate media contaminated with high levels of hazardous substances, pollutants, or contaminants; and
- Mitigate or abate, not inconsistent with the NCP, other situations or factors that may pose a threat to public health, welfare, or the environment.

Respondents shall complete the following tasks as part of this RI/FS:

Task 1: Project Scoping and RI/FS Planning Documents

Task 2: Site Characterization and RI Report

Task 3: Baseline Risk Assessment

Task 4: Treatability Studies (if required)

Task 5: Develop and Screen Remedial Action Alternatives

Task 6: Detailed Analysis of Alternatives and Feasibility Study Report

Task 7: Community Involvement and Technical Assistance Plan

Task 8: Progress Reports

TASK 1: PROJECT SCOPING AND RI/FS PLANNING DOCUMENTS

A detailed scope of the RI/FS shall be developed by the Respondents and the EPA. The scope shall be informed by existing data and information, including the Expanded Site Inspections, each dated September 29, 2009, for the Armstrong World Industries, Allied Industrial Park, and Former Macon Naval Ordnance Landfill, as well as all other Site data previously collected under the regulatory oversight of EPA and/or GAEPD, and any appropriate data relating to the adjacent OU1 area and the MNOP Site.

The detailed scope shall include, in part, a strategy for evaluating the contaminants of concern associated with Armstrong World Industries' "remote landfill," and the "former Macon Naval Ordnance Plant landfill" which is adjacent to and contiguous with the remote landfill. The scope shall address all environmental media such as soil, air, soil gases, groundwater, surface water, sediments, and wetlands, including those associated with Rocky Creek. Fish and biota associated with Rocky Creek shall also be evaluated within the scope of the RI/FS.

The Respondents shall document the specific project scope in a Work Plan. Because the work required to perform an RI/FS is not fully known at the onset, and is phased in accordance with a site's complexity

and the amount of available information, it may be necessary to modify the Work Plan during the RI/FS to satisfy the objectives of the study. The following activities shall be performed by the Respondents as a function of the project scoping and RI/FS planning process:

1.1. Technical Requirements

- 1) Evaluate existing data: The Respondents shall gather and analyze the existing information regarding the Site and shall conduct a visit to the Site to assist in planning the RI/FS. Before planning RI/FS activities, all existing Site data shall be thoroughly compiled and reviewed by the Respondents. Specifically, this compilation and review shall include currently available data relating to the varieties and quantities of hazardous substances, pollutants or contaminants at the Site and past disposal practices (specifically, the type of contaminants released, leaked, discharged, spilled, buried, sprayed, applied, or otherwise disposed, and where, when, and by whom). This compilation and review shall also include results from any previous sampling or other investigations that may have been conducted. The Respondents shall refer to Table 2-1 of the RI/FS Guidance for a comprehensive list of data collection information sources. This information shall be utilized in determining the data needed for site characterization, better defining potential applicable or relevant and appropriate requirements (ARARs), and developing a range of preliminarily identified Remedial Action Alternatives. The Respondents shall evaluate the need for Removal Actions to mitigate or control on-going releases or threatened releases of hazardous substances to the environment.

Subject to the EPA approval, Data Quality Objectives (DQOs) shall be established that specify the usefulness of existing data. Decisions on the necessary data and DQOs shall be made by the EPA.

- 2) Conduct Site Visit: Should the EPA or GAEPD request it, the Respondents shall conduct a visit to the Site with the EPA and/or GAEPD Remedial Project Manager (RPM) during the project scoping phase to assist in developing a conceptual understanding of sources and areas of contamination as well as potential exposure pathways and receptors at the Site. During the visit to the Site, the Respondents shall observe the physiography, hydrology, geology, and demographics of the Site as well as related natural resource, ecological and cultural features. This information shall be utilized to develop the project scope and to determine the extent of additional data necessary to characterize the Site, assist in identifying potential ARARs, and narrow the range of preliminarily identified Remedial Action Alternatives.
- 3) Refine the RI/FS Objectives and Develop Preliminary Remedial Action Objectives and Alternatives: Once existing information about the Site has been analyzed and a conceptual understanding of the potential risks posed by the Site has been obtained, the Respondents shall review and, if necessary, refine the RI/FS Objectives and preliminary Remedial Action Objectives for each contaminated or potentially contaminated medium and exposure pathway. Any revised Objectives shall be documented in a technical memorandum and are subject to the EPA approval prior to development of the other planning and scoping deliverables. The Respondents shall then identify a preliminary range of broadly defined general response actions, associated remedial technologies and potential remedial alternatives. The range of potential remedial technologies and processes shall include, at a minimum, technologies and

processes in which treatment is used to reduce the toxicity, mobility, or volume of the waste; alternatives that involve containment and treatment components; alternatives that involve containment with little or no treatment; and a no-action alternative.

- 4) Document the Need for Treatability Studies: If remedial actions involving treatment have been identified by the Respondents or the EPA, Treatability Studies shall be required except where the Respondents can demonstrate to the EPA's satisfaction that they are not needed. Where Treatability Studies are needed, identification of possible technologies and screening shall be done and the results submitted with the RI/FS Work Plan (or a subsequent addendum to the Work Plan). Initial Treatability Study activities (such as research and study design) shall occur concurrently with Site Characterization activities.
- 5) Begin Preliminary Identification of Potential ARARs: The Respondents shall conduct a preliminary identification of potential State and Federal ARARs (chemical-specific, location-specific, and action-specific) to assist in the refinement of Remedial Action Objectives and the initial identification of Remedial Action Alternatives. ARARs identification shall continue as conditions and contaminants at the Site and Remedial Action Alternatives are better defined.

1.2.1. Deliverables

At the conclusion of the project scoping and planning phase, the Respondents shall submit an RI/FS Work Plan, a Sampling and Analysis Plan (SAP), and a Health and Safety Plan.

- 1) RI/FS Work Plan: A Work Plan documenting the decisions and evaluations completed during the scoping process shall be submitted to the EPA for review and approval. The Work Plan shall be developed in conjunction with the SAP and the Health and Safety Plan, although each plan may be delivered under separate cover. The Respondents shall refer to Appendix B of the RI/FS Guidance for a comprehensive description of the contents of the required Work Plan.

The RI/FS Work Plan shall include a comprehensive description of the work to be performed, the media to be investigated (i.e., air, groundwater, surface water, surface and subsurface soils, and sediments, etc.), the chemicals and compounds to be assessed, the methodologies to be utilized, and the rationale for the selection of each methodology. A comprehensive schedule for completion of each major activity and submission of each deliverable shall also be included. This schedule shall be consistent with Attachment C. The RI/FS Work Plan and SAP must be reviewed and approved by the EPA, and the Health and Safety Plan reviewed by the EPA, prior to the initiation of field activities.

Specifically, the Work Plan shall present the following:

- A statement of the problem(s) and potential problem(s) posed by the Site;
- The objectives of the RI/FS as outlined by the EPA in this SOW, and as may be refined by the Respondents, subject to the EPA approval;
- A background summary setting forth the following:

- a description of the Site including the geographic location, and, to the extent possible, a description of the physiography, hydrology, geology, demographics, and the ecological, cultural, and natural resource features of the Site;
- a synopsis of the history of the Site including a summary of past disposal practices and a description of previous responses that have been conducted by local, State, Federal, or private parties at the Site;
- a summary of existing environmental data in terms of physical and chemical characteristics of the contaminants identified and their distribution among the environmental media at the Site.
- A description of the Site Management Strategy as outlined by the EPA in this SOW and as may be modified with the EPA's approval;
- Preliminary Presentation of the Conceptual Site Model (CSM) and identification of data gaps;
- Preliminary identification of Remedial Action Alternatives and data needed for evaluation of Remedial Action Alternatives;
- A process for identifying Federal and State ARARs (chemical-specific, location-specific, and action-specific);
- A detailed description of the tasks to be performed, the information needed for each task, the information needed for the Baseline Human Health Risk Assessment and the Ecological Risk Assessment, and the information to be produced during and at the conclusion of each task;
- A description of the work products that shall be submitted to the EPA;
- A schedule for each of the required activities which is consistent with Attachment C and the RI/FS Guidance;
- A project management plan, including a data management plan (data will be submitted to the EPA in the required electronic data deliverable (EDD) format per the EPA's *Environmental Data Submission Guidance* (SESDGUID-106-R0, most recent revision), monthly and annual progress reports, and meetings and presentations to the EPA at the conclusion of each major phase of the RI/FS.

Because of the iterative nature of the RI/FS, additional data requirements may be identified throughout the RI/FS process. The Respondents shall submit a technical memorandum documenting any need for additional data along with the proposed DQOs whenever such requirements are identified. In any event, the Respondents are responsible for obtaining additional data and analysis found to be necessary, as identified by the EPA, consistent with the general scope and objectives of the RI/FS as defined in this SOW and the Administrative Order.

- 2) **Sampling and Analysis Plan:** The Respondents shall prepare a SAP to ensure that sample collection and analytical activities are conducted in accordance with technically acceptable protocols and that the data generated will meet the DQOs established. The SAP provides a mechanism for planning field activities and consists of a Field Sampling and Analysis Plan (FSP) and a Quality Assurance Project Plan (QAPP).
 - a. The FSP shall define, in detail, the sampling and data-gathering methods that shall be used on the project. It shall include sampling objectives, sample location (horizontal and vertical) and frequency, sampling equipment and procedures, sample handling and

analytical parameters. Analytical parameters shall include a comprehensive list of chemicals and compounds of interest.

- b. The QAPP shall describe the project objectives and organization, functional activities, and quality assurance and quality control (QA/QC) protocols that shall be used to achieve the desired DQOs. The QAPP will be prepared in accordance with *EPA Requirements for Quality Assurance Project Plans (QA/R-5)* (EPA/240/B-01/003, March 2001) and *EPA Guidance for Quality Assurance Project Plans (QA/G-5)* (EPA/240/R-02/009, December 2002). The DQOs will, at a minimum, reflect use of analytical methods for identifying contamination and addressing contamination consistent with risk based screening levels. In addition, the QAPP shall address personnel qualifications, sampling procedures, sample custody, analytical procedures, and data reduction, validation, and reporting, consistent with the EPA Region 4 Science and Ecosystem Division (SED) *Field Branches Quality System and Technical Procedures* for field measurement and field sampling procedures (revised periodically and available at <http://www.epa.gov/region4/sesd/fbqstp/>).
 - c. Generally, the analytical program shall include the Target Compound List (TCL), Target Analyte List (TAL), methane, and 1,3-butadiene. However, the work plan may propose, on a case-by-case basis, if adequate justification and information is available, a limited list of analytes for one or more specific areas.
- 3) Health and Safety Plan: A Health and Safety Plan shall be prepared in conformance with the Respondents' health and safety program, and in compliance with OSHA regulations and protocols. The Health and Safety Plan shall include the eleven elements described in the RI/FS Guidance, such as a health and safety risk analysis, a description of monitoring and personal protective equipment, medical monitoring, and site control. It should be noted that the EPA does not "approve" the Respondents' Health and Safety Plan, but rather the EPA reviews it to ensure that all necessary elements are included, and that the plan provides for the protection of human health and the environment.
- 4) Laboratory Qualifications to Meet Analytical Needs: The Respondents shall demonstrate that the laboratory and type of laboratory analyses that will be utilized during Site Characterization meets the specific QA/QC requirements and the DQOs as specified in the SAP. This demonstration must include use of methods and analytical protocols for the chemicals of interest (listed above), in the media of interest, within detection and quantification limits consistent with both QA/QC procedures and DQOs approved by the EPA in the QAPP for the Site. The Respondents shall provide assurances that the EPA has access to laboratory personnel, equipment and records for sample collection, transportation, and analysis. The EPA may require that the Respondents submit detailed information to demonstrate that the laboratory is qualified to conduct the work, including information on personnel qualifications, equipment, and material specifications. In addition, the EPA may require submittal of data packages equivalent to those generated in the EPA Contract Laboratory Program (CLP) and may require laboratory analysis of performance samples (blank and/or spike samples) in sufficient number to determine the capabilities of the laboratory. The Respondents shall only use laboratories which have and follow a documented Quality Assurance Program which complies with ANSI/ASQC E-4 1994, *Specifications and*

Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs, (American National Standard, January 5, 1995) and *EPA Requirements for Quality Management Plans (QA/R-2)* (EPA/240/B-01-002, March 2001) or equivalent documentation as determined by the EPA.

TASK 2: SITE CHARACTERIZATION AND RI REPORT

As part of the RI, the Respondents shall perform the activities described in this task, including the preparation of a Site Characterization Summary and a RI Report. The overall objective of Site Characterization is to identify releases, define the nature and extent of contamination, and describe areas of the Site that may pose a threat to human health or the environment. This objective is accomplished with a CSM to define the current understanding of Site conditions and identify data gaps; this shall be based on determining the physiography, geology, ecological habitats, human uses, and hydrology of the Site. Surface and subsurface pathways of migration shall also be defined. The Respondents shall identify the sources of contamination and define the nature, extent, and volume of the sources of contamination, including the physical and chemical constituents and concentrations at incremental locations in the affected media. The Respondents shall identify sources and contaminated media that may warrant Removal Action. The Respondents shall also investigate the extent of migration of the contaminants, the volume of contaminated media, and any changes in the physical or chemical characteristics. This investigation will provide for a comprehensive understanding of the nature and extent of contamination at the Site. Using this information, the CSM shall be refined to describe contaminant fate and transport.

During this phase of the RI/FS, the Work Plan, SAP and Health and Safety Plan shall be implemented. Field data shall be collected and analyzed to provide the information required to accomplish the objectives of the study. The Respondents shall notify the EPA at least fifteen days in advance of the field work regarding the planned dates for field activities, including installation of monitoring wells, installation and calibration of equipment, pump tests, field lay out of any sampling grid, excavation, sampling and analysis activities, and other field investigation activities.

In view of the unknown conditions at the Site, activities are often iterative and, to satisfy the objectives of the RI/FS, it may be necessary for the Respondents to supplement the work specified in the initial Work Plan. The Respondents shall provide monthly progress reports and participate in meetings with the EPA at major points in the RI/FS.

2.1. Site Characterization Technical Requirements

- 1) **Field Investigation and Data Acquisition:** The field investigation includes gathering data to define physical characteristics, sources of contamination, and the nature and extent of contamination at the Site as necessary to fill data gaps. These activities shall be performed by the Respondents in accordance with the EPA-approved Work Plan and SAP. At a minimum, this investigation shall include the following activities:
 - a. **Implementing and Documenting Field Support Activities:** The Respondents shall initiate field support activities following approval of the Work Plan and SAP. Field support activities may include obtaining access to the Site, property surveys, scheduling, and procuring equipment, office space, laboratory services, utility services and/or contractors.

The Respondents shall have the primary responsibility for obtaining access in support of field activities.

- b. Investigating and Defining Site Physical and Biological Characteristics: The Respondents shall collect data on the physical and biological characteristics of the Site and its surrounding areas including the physiography, geology, and hydrology, and specific physical characteristics identified in the Work Plan. This information shall be ascertained through a combination of assessment of existing data, physical measurements, observations, and sampling efforts and shall be utilized to define potential transport pathways and receptor populations. In defining the physical characteristics of the Site, the Respondents shall also obtain sufficient engineering data (such as pumping characteristics, soil particle size, permeability, etc.) for the projection of contaminant fate and transport and the development and screening of Remedial Action Alternatives, including information necessary to evaluate treatment technologies.
 - c. Defining Sources of Contamination: The Respondents shall locate each source of contamination as necessary to support the development of a Site-wide remedial strategy. For each location, the lateral and vertical extent of contamination shall be determined by sampling at incremental depths on a sampling grid or in another organized fashion approved by the EPA. The physical characteristics and chemical constituents and their concentrations shall be determined for all suspected, known and discovered sources of contamination. The Respondents shall conduct sufficient sampling to define the boundaries of the contaminant sources to the level established in the QA/QC plan and DQOs. Sources of contamination shall be analyzed for the potential of contaminant release (e.g., long term leaching from soil), contaminant mobility and persistence, and characteristics important for evaluating remedial actions, including information necessary to evaluate treatment technologies. Source areas shall be evaluated for the presence of Principle Threat Source Material (PTSM).
 - d. Defining Nature and Extent of Contamination: The Respondents shall gather information (both existing and newly collected) to describe the nature and extent of contamination as a final step during the field investigation. To describe the nature and extent of contamination, the Respondents shall utilize the information on Site physical characteristics and sources of contamination. The Respondents shall then implement an iterative monitoring program and any study program identified in the Work Plan or SAP such that the migration of contaminants through the various media at the Site can be determined. In addition, the Respondents shall describe contaminant fate and transport. This process is continued until the lateral and vertical extent of contamination has been defined.
- 2) Data Management: The Respondents shall consistently document the quality and validity of field and laboratory data compiled during the RI. At a minimum, this documentation shall include the following activities:
- a. Documenting Field Activities: Information gathered during characterization of the Site shall be consistently documented and adequately recorded by the Respondents in well

maintained field logs and laboratory reports. The method(s) of documentation must be specified in the Work Plan and/or the SAP. Field logs must be utilized to document observations, calibrations, measurements, and significant events that have occurred during field activities. Laboratory reports must document sample custody, analytical responsibility, analytical results, adherence to prescribed protocols, nonconformity events, corrective measures, and/or data deficiencies. Supporting documentation described as the "Data Package" must be provided with the sample analysis for all samples split or duplicated with the EPA.

- b. Maintaining Sample Management and Tracking: The Respondents shall maintain field reports, sample shipment records, analytical results, and QA/QC reports to ensure that only validated analytical data are reported and utilized in the development and evaluation of the BLRA and Remedial Action Alternatives. Analytical results developed under the Work Plan shall not be included in any characterization reports for the Site unless accompanied by or cross-referenced to a corresponding QA/QC report. In addition, the Respondents shall establish a data security system to safeguard chain-of-custody forms and other project records to prevent loss, damage, or alteration of project documentation.
- c. Data Handling and Reporting: Site information and data shall be managed, evaluated, and reported using an Electronic Data Deliverable (EDD) in the EPA's Data Archival and ReTrieval (DART) program following the EPA's *Environmental Data Submission Guidance* (SESDGUID-106, most recent revision).

Data shall be used in the preparation of the RI Report and Risk Assessment Report tables, maps and figures. Typical activities include, but are not limited to, the following:

- Data usability evaluation and field quality assurance/quality control (QA/QC)
 - Data Reduction and Tabulation
 - Data trend evaluation and/or modeling and submission of Technical Memoranda
 - Soil boring and monitoring well logs
 - Field sampling data
 - Hydrogeological testing data
 - Geophysical data (downhole geophysics, survey)
 - Analytical results
- 3) Data Evaluation and Site Characterization (Fate and Transport Evaluation): The Respondents shall analyze and evaluate the data to describe: (1) physical and biological characteristics of the Site that are relevant to contaminant migration and potential receptors; (2) contaminant source characteristics; (3) nature and extent of contamination; and (4) contaminant fate and transport. The information on physical and biological characteristics, source characteristics, and nature and extent of contamination shall be used in the analysis of contaminant fate and transport. The evaluation shall include the actual and potential magnitude of releases from the sources and lateral and vertical spread of contamination as well as mobility and persistence of contaminants. Principle Threat Source Material shall be identified. On-going releases and threats of imminent releases shall be identified. Where modeling is appropriate, such models shall be identified to the EPA in a technical memorandum prior to their use. All data and modeling, including any

proprietary modeling programs, shall be made available to the EPA together with a sensitivity analysis. All models shall be approved by the EPA prior to their use.

The data evaluation shall provide all information necessary for the Baseline Risk Assessment, the development and evaluation of Remedial Action Alternatives, the refinement and identification of ARARs, and the assessment of releases that may warrant Removal Actions. Analyses of data collected for Site Characterization shall meet the DQOs developed in the QAPP.

Respondents shall collect any additional data identified by the EPA as necessary to meet the objectives of the RI or support preparation of the Baseline Risk Assessment (see *"Guidance for Data Useability in Risk Assessment (Part A)"*, U.S. the EPA, Office of Emergency and Remedial Response, April 1992, OSWER Publication No. 9285.7-09A).

2.2 Site Characterization Deliverables

The Respondents shall prepare the Preliminary Site Characterization Summary and the RI Report.

- 1) **Site Characterization Summary**: After completing field sampling and analysis, the Respondents shall prepare a concise Site Characterization Summary. This summary shall describe and display data for the Site (both existing and newly collected), documenting the location and characteristics of surface and subsurface features and contamination at the Site including the affected medium, location, types, physical state, and quantity and concentrations of contaminants. In addition, the location, dimensions, physical condition, and varying concentrations of each contaminant throughout each source and the extent of contaminant migration through each of the affected media shall be documented. The Site Characterization Summary shall provide the basis for developing the Baseline Risk Assessment and remedial action objectives, developing and screening of Remedial Action Alternatives, and further identifying ARARs.
- 2) **Remedial Investigation (RI) Report**: The Respondents shall prepare and submit a Draft RI Report to the EPA for review and approval. This report shall summarize results of field activities to characterize the Site, sources of contamination, nature and extent of contamination, and the fate and transport of contaminants. The Respondents shall refer to the RI/FS Guidance for an outline of the report format and contents. Following comment by the EPA, the Respondents shall prepare a Final RI Report which satisfactorily addresses the EPA's comments.

TASK 3: BASELINE RISK ASSESSMENT

Respondents shall develop the Baseline Risk Assessment in order to determine whether Site contaminants pose a current or future potential risk to human health and the environment in the absence of any remedial action under current and reasonably anticipated future land uses at the Site. The Respondents shall develop the human health portion of the Baseline Risk Assessment in accordance with the EPA's *Interim Final Risk Assessment Guidance for Superfund - Volume I - Human Health Evaluation Manual (Part A)* (December 1989) and *Development of Risk-Based Remediation Goals (Part B)* (December 1991). These documents describe process of gathering and assessing human health risk

information in addition to developing remediation goals. Other resources that the Respondents must utilize when performing the BLRA shall include: EPA's *Superfund Exposure Assessment Manual* (SEAM), the Integrated Risk Information System (IRIS), the Health Effects Assessment Summary Tables (HEAST), and the Supplemental to the EPA Region 4 Risk Assessment Guidance (3-26-91, and updated). The Respondents shall utilize the *Interim Final Risk Assessment Guidance for Superfund Environmental Evaluation Manual*, along with the EPA Supplemental Guidance to RAGS: Region 4 Bulletins, Ecological Risk Assessment (2001 and updated) in preparing the Ecological Risk Assessment.

3.1. Technical Requirements of the Human Health Baseline Risk Assessment

The Respondents shall evaluate and assess the risk to human health posed by Site contaminants and shall prepare a draft and final Human Health Risk Assessment Report (HHBLRA) that addresses the following:

- 1) **Hazard Identification:** The Respondents shall review the information that is available on the hazardous substances present at the Site and shall identify the chemicals of potential concern (COPCs). The initial selection shall be based on intrinsic toxicological properties and an evaluation of quantitation limits, qualifiers, blank contamination, and background data. If necessary, a further reduction of the COPCs can be performed based on the frequency of detection, the concentration of contaminants on-site as compared to risk-based screening levels, and relative toxicity. The Respondents shall submit to the EPA for review and approval Technical Memorandum #1 which contains a list of all the hazardous substances present at the Site, proposing from this list the COPCs with the known concentrations. This memorandum shall include a discussion of the rationale for the identification of the COPCs.

This Technical Memorandum shall be submitted to the EPA with the Site Characterization Summary. Comments on the Technical Memorandum shall be incorporated into the draft Baseline Risk Assessment as directed by the EPA.

- 2) **Pathway Analysis:** Critical exposure pathways (e.g., drinking water, fisheries) shall be identified and analyzed. The proximity of contaminants to exposure pathways and their potential to migrate into critical exposure pathways shall be assessed.
- 3) **Characterization of Site and Potential Receptors:** The Respondents shall identify and characterize human populations in the exposure pathways.
- 4) **Exposure Assessment:** The exposure assessment will identify the magnitude of actual or potential human exposures, the frequency and duration of these exposures, and the routes by which receptors are exposed. The exposure assessment shall include an evaluation of the likelihood of such exposures occurring and shall provide the basis for the development of acceptable exposure levels. In developing the exposure assessment, the Respondents shall develop reasonable maximum estimate of exposure for both current land use conditions and reasonably anticipated future land use conditions at the Site. The Respondents shall submit to the EPA the Exposure Assessment and Technical Memorandum #2 for review and approval.

- 5) **Risk Characterization:** During risk characterization, chemical-specific toxicity information, combined with quantitative and qualitative information from the exposure assessment, shall be compared to measured levels of contaminant exposure levels and the levels predicted through environmental fate and transport modeling. These comparisons shall determine whether concentrations of contaminants at or near the Site are affecting or could affect human health under current and reasonably anticipated future land uses at the Site.
- 6) **Identification of Limitations/Uncertainties:** The Respondents shall identify critical assumptions (e.g., background concentrations and conditions) and uncertainties in the report.
- 7) **Site Conceptual Model:** Based on contaminant identification, exposure assessment, toxicity assessment, and risk characterization, the Respondents shall further refine the Site's CSM.

3.2. Technical Requirements of the Ecological Risk Assessment

The Respondents shall evaluate and assess the risk to the environment posed by Site contaminants. The Respondents shall utilize the *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (EPA 540-R-97-006)* and *Supplemental Guidance to RAGS: Region 4 Bulletins, Ecological Risk Assessment* in evaluating the Site. This document outlines an 8-step process, including numerous scientific/management decision points (SMDPs), for evaluating potential risks to potential receptors.

The screening level ecological risk assessment (steps 1 and 2) is a streamlined version of the complete process, and is intended to allow a rapid determination of whether the Site poses a potential ecological risk, and to identify which, if any, contaminants and exposure pathways require further evaluation. If no unacceptable potential risks are estimated during the screening level evaluation using conservative assumptions, the ecological risk assessment process stops at that point. If the screening level evaluation predicts potentially unacceptable risks to ecological receptors, then further evaluation is required.

The 8 steps are composed of the following:

1. **Screening-Level Preliminary Problem Formulation and Ecological Effects Evaluation.** The Respondents shall review the: (1) existing information and address the environmental setting and contaminants known or suspected to exist at the Site and the maximum concentration present for each medium, contaminant fate and transport mechanisms that might exist at the Site; (2) the mechanisms of eco-toxicity associated with contaminants and likely categories of receptors that could be affected; (3) the complete exposure pathways that exist at the Site from contaminant sources to receptors that could be affected; and (4) develop screening eco-toxicity values equivalent to chronic No Observed Effect Levels (NOELs) based on appropriate conservative assumptions.
2. **Screening-Level Preliminary Exposure Estimate and Risk Calculation.** The Respondents shall develop exposure estimates based upon appropriate conservative assumptions and

maximum concentrations present and calculate hazard quotients (or hazard indices, if appropriate) indicating which, if any, contaminants and exposure pathways might pose ecological threats. The document containing these first two steps of the Ecological Risk Assessment process will be submitted to the EPA for review and approval as provided in Attachment C. If the screening assessment demonstrates the potential for unacceptable risks to ecological receptors, then the Ecological Risk Assessment process will continue with the following steps.

3. Baseline Ecological Risk Assessment Problem Formulation. If required by EPA based on the first two steps, the Respondents shall develop the problem formulation by refining the ecological chemicals of preliminary concern, further characterizing ecological effects of contaminants; reviewing and refining information on contaminant fate and transport, complete exposure pathways, and ecosystems potentially at risk; selecting assessment endpoints; and developing a conceptual model with working hypotheses or questions that the Site investigation will address. The document containing this step will be submitted to the EPA for review and approval as provided in Attachment C.
4. Study Design and Data Quality Objective Process. The Respondents shall develop a study design defining the measurement endpoints, data quality objectives and statistical considerations, methods of analysis; and a Work Plan and Sampling and Analysis Plan for the ecological investigation outlining the data that will be collected during the remedial investigation and the risk assessment methods which will be used in interpreting the data. This document should be submitted to the EPA for review and approval.
5. Field Verification of Sampling Design. The Respondents shall verify the field collection methods and sample design specified by the sampling plan. A document describing verification of, and any suggested modifications to, the study design, work plan, or sampling and analysis plan shall be submitted to the EPA for review and approval.
6. Site Investigation and Analysis Phase. The Respondents shall conduct the Site investigation to collect the data to be used in the analysis phase as described in the Work Plan and the Sampling and Analysis Plan. Any deviation from the work plan should be documented and submitted to the EPA for review and approval.
7. Risk Characterization. The Respondents shall develop the Risk Characterization integrating the results of the exposure profile and exposure-response analyses. The result of this characterization will determine if there are unacceptable risks posed to ecological receptors by Site-related contaminants. If there are unacceptable risks, contaminant levels protective of ecological receptors should be determined and reported as preliminary remedial goals. The Draft Ecological Assessment Report shall be submitted to the EPA and the GAEPD for review and approval. Following Agency review of the Draft Ecological Assessment Report, the Respondents shall incorporate the EPA's comments into the Final Ecological Assessment Report.
8. Risk Management. This step in the process is distinctly different from risk assessment. The risk assessment establishes whether a risk is present and defines a range or

magnitude of the risk. The risk-management decision is the responsibility of the EPA. The EPA will evaluate the potential adverse effects posed by residual levels of Site contaminants and posed by the remedial actions themselves in order to understand and balance the ecological costs and benefits of the available remedial options. Understanding the uncertainties associated with the risk assessment also is critical to evaluating the overall protectiveness of any remedy. The Respondents will provide technical support to the EPA in the interpretation and communication of risk assessment results, and in evaluating the potential effects of proposed remedial options.

3.3 Current and Future Land Uses and Reuse Assessment

As an Attachment to the RI Report, the Respondents shall submit a Memorandum to the EPA for review and approval that evaluates the current and reasonably anticipated future land uses at the Site. A copy will be provided to GAEPD. The Memorandum shall identify: 1) past uses at the Site; 2) current uses of the Site, and neighboring areas; 3) the owner's plans for the Site following cleanup and any prospective purchasers; 4) applicable zoning laws and ordinance; 5) current zoning; 6) applicable local area land use plans, master plans and how they affect the Site; 7) existing local restrictions on property; 8) property boundaries; 9) state and federal aquifer designations, groundwater use determinations, wellhead protection areas, recharge areas and other areas identified in GAEPD resource protection programs; 10) Flood plains, wetland, sensitive environments, habitat for endangered or threatened species; and 11) utility rights of way.

If the EPA, in its sole discretion, following consultation with GAEPD, determines that a Reuse Assessment is necessary, Respondents will perform the Reuse Assessment in accordance with the EPA guidance, including, but not limited to: *Reuse Assessments: A Tool To Implement The Superfund Land Use Directive*, OSWER Directive 9355.7-06P, June 2001. The Reuse Assessment should provide sufficient information to develop realistic assumptions about the reasonably anticipated future uses for the Site.

3.4. Baseline Risk Assessment Deliverables

The Respondents shall prepare and submit Risk Assessment Technical Memorandum #1 (identification of COPCs). The Respondents shall prepare and submit Risk Assessment Memorandum #2 which will summarize the toxicity assessment and the human and ecological exposure assessments. The Respondents shall prepare and submit Technical Memorandum #3, the Screening Level Ecological Risk Assessment (SLERA) documenting steps 1 and 2 of the ecological risk assessment process. The EPA shall make these memoranda available to all interested parties for comment by placing them in the information repository for the Site and placing them in the Administrative Record. The Respondents shall prepare the draft and final Baseline Human Health Risk Assessment Report and Ecological Risk Assessment Reports.

The Respondents shall prepare and submit, as an attachment to the RI report, a memorandum to the EPA for review and approval that evaluates the current and reasonably anticipated future land uses at the Site.

TASK 4: TREATABILITY STUDIES

4.1. Technical Requirements of Treatability Studies

To the extent the EPA deems Treatability Studies are necessary, they shall be performed by the Respondents to assist in the detailed analysis of alternatives. If applicable, study results will be used in the design of the selected remedy. The following activities shall be performed by the Respondents.

- 1) **Determination of Candidate Technologies:** The Respondents shall identify in a technical memorandum, subject to the EPA review and comment, candidate technologies for a Treatability Studies program during project planning. The candidate technologies shall cover the range of technologies required for alternatives analysis. The specific data requirements for the Treatability Studies program shall be determined and refined during Site Characterization and the development and screening of Remedial Action Alternatives.
- 2) **Determine the Need for Treatability Studies:** The Respondents shall conduct a literature survey to gather information on performance, relative costs, applicability, removal efficiencies, operation and maintenance (O&M) requirements, and implementability of candidate technologies. If candidate technologies have not been sufficiently demonstrated, or cannot be adequately evaluated for the Site on the basis of available information, Treatability Studies shall be conducted. The EPA shall determine whether Treatability Studies will be required.

4.2. Treatability Study Deliverables

- 1) **Treatability Study Work Plan:** Where the EPA has determined that Treatability Studies are required, the Respondents and the EPA shall decide on the type of Treatability Studies to use (e.g., bench versus pilot).
 - a. The Respondents shall prepare a Treatability Study Work Plan, or amendment to the original RI/FS Work Plan, for the EPA's review and approval. This Plan shall describe the background of the Site, remedial technologies to be tested, test objectives, experimental procedures, treatability conditions to be tested, measurements of performance, analytical methods, data management and analysis, health and safety, and residual waste management. The DQOs for Treatability Studies shall be documented as well. If pilot-scale Treatability Studies are to be performed, the Treatability Study Work Plan shall describe pilot plant installation and start-up, pilot plant operation and maintenance procedures, and operating conditions to be tested. If testing is to be performed off-site, permitting requirements must be addressed.
 - b. If the original QAPP and FSP are not adequate for defining the activities to be performed during the Treatability Studies, a separate Treatability Study SAP or amendment to the original RI/FS SAP shall be prepared by the Respondents for EPA review and approval.

- c. If the original RI/FS Health and Safety Plan does not adequately address the activities to be performed during the Treatability Studies, a separate or amended Health and Safety Plan shall be developed by the Respondents. The EPA reviews for completeness, but does not "approve," the Treatability Study Health and Safety Plan.
- 2) Treatability Study Evaluation Report: Following completion of Treatability Studies, the Respondents shall analyze and interpret the testing results in a technical report to the EPA. Depending on the sequence of activities, this report may be a part of the RI/FS Report or a separate deliverable. The report shall evaluate the effectiveness of each technology, implementability, cost, and compare actual results with predicted results. The report shall also evaluate full-scale application of the technology, including a sensitivity analysis identifying the key parameters affecting full-scale operation.

TASK 5: DEVELOP AND SCREEN REMEDIAL ACTION ALTERNATIVES

5.1. Technical Requirements of Remedial Action Alternatives Development and Screening

The Respondents shall begin to develop and evaluate, concurrently with the RI Site Characterization task, a range of appropriate remedial options that, at a minimum, ensure protection of human health and the environment and comply with all ARARs. The following activities shall be performed by the Respondent to develop and screen Remedial Action Alternatives.

- 1) Refine and Document Remedial Action Objectives: The Respondents shall review the preliminary remedial action objectives which were established during the Scoping phase and, if necessary, propose refinement. Any revised Remedial Action Objectives for the Site shall be documented in a technical memorandum to the EPA. The objectives shall specify the contaminants and media of interest, exposure pathways and receptors, and preliminary remedial goals for each exposure route and media.
- 2) Develop General Response Actions: The Respondents shall develop general response actions for each medium of interest to satisfy the Remedial Action Objectives.
- 3) Identify Areas and Volumes of Media: The Respondents shall identify areas and volumes of media to which general response actions may apply, taking the Remedial Action Objectives and the preliminary remedial goals into account.
- 4) Identify, Screen, and Document Remedial Technologies: The Respondents shall identify and evaluate technologies applicable to each general response action to eliminate those that cannot be implemented at the Site. General response actions shall be refined to specify remedial technology types. Technology process options for each of the technology types shall be identified either concurrent with the identification of technology types or following the screening of the considered technology types. Process options shall be evaluated on the basis of effectiveness, implementability, and cost factors to select and retain one or, if necessary, more representative processes for each technology type. The technology types and process options shall be summarized for inclusion in a technical memorandum. The reasons for eliminating technologies must be specified.

- 5) Assemble and Document Alternatives: The Respondents shall assemble selected representative technologies into alternatives for each affected medium. Together, all of the alternatives shall represent a range of treatment and containment combinations that shall address the Site as a whole. A summary of the assembled alternatives and their related action-specific ARARs shall be prepared by the Respondents for inclusion in a technical memorandum. The reasons for eliminating alternatives during the preliminary screening process must be specified.
- 6) Refine Alternatives: The Respondents shall refine the Remedial Action Alternatives with contaminant volumes and sizing of operations, as necessary. Sufficient information shall be collected for an adequate comparison of alternatives. Remedial action objectives for each medium shall also be refined as necessary to incorporate any new risk assessment information presented in the EPA's Baseline Risk Assessment Report. Additionally, action-specific ARARs shall be updated as the Remedial Action Alternatives are refined.
- 7) Conduct and Document Screening Evaluation of Each Alternative: The Respondents may perform a final screening process based on short and long term effectiveness, implementability, and relative cost. Note that the evaluation of effectiveness involves evaluating the long-term and short-term risks, among other factors, associated with a remedial alternative. Generally, this screening process is only necessary when there are many feasible alternatives available for detailed analysis. If necessary, the screening of alternatives shall be conducted to assure that only the alternatives with the most favorable composite evaluation of all factors are retained for further analysis.

As appropriate, the screening shall preserve the range of treatment and containment alternatives that was initially developed. The range of remaining alternatives shall include options that use treatment technologies and permanent solutions to the maximum extent practicable.

5.2. Develop and Screen Remedial Alternatives Deliverables

The Respondents shall prepare technical memoranda summarizing the work performed and the results of each task above, including an alternatives array summary. This alternatives array shall be modified by the Respondents when conducting Task 6 if required by the EPA's comments to assure identification of a complete and appropriate range of viable alternatives to be considered in the detailed analysis. The Respondents shall prepare and submit two technical memoranda for this task: a Remedial Action Objectives Technical Memorandum and an Alternative Screening Technical Memorandum. These memos may be combined into a single memo as appropriate.

- 1) Remedial Action Objectives Technical Memorandum: The Respondents shall submit a Remedial Action Objectives Technical Memorandum for review and approval by the EPA and GAEPD. The Respondents shall submit the Remedial Action Objectives Technical Memorandum at the same time as the Draft RI Report. Based on the baseline human health and ecological risk assessments, the Respondents shall refine the preliminary remedial action objectives, document the rationale for the refinement of the preliminary remedial action objectives, and provide the Site-specific remedial action objectives for each chemical in each medium in a Remedial Action Objectives Technical Memorandum. The remedial action

objectives shall specify the contaminants and media of concern, potential exposure pathways and receptors; and contaminant level or range of levels (at particular locations for each exposure route) that are protective of human health and the environment. The refined remedial action objectives shall be developed by considering the factors set forth in 40 C.F.R. § 300.430(e)(2)(i). The Respondents shall incorporate the EPA's comments on the Remedial Action Objectives Technical Memorandum in the Alternatives Screening Technical Memorandum.

- 2) **Technical Memorandum on Remedial Technologies, Alternatives and Screening:** The Respondents shall submit an Alternatives Screening Technical Memorandum to the EPA, with copies to GAEPD, for review and approval by the EPA. The Screening Technical Memorandum summarizes the results and rationale employed in screening; arrays the alternatives that remain after screening; and identifies the action-specific ARARs for the alternatives that remain after screening. If required by the EPA, the Respondents shall modify the alternatives array to assure that the array identifies a complete and appropriate range of viable alternatives to be considered in the detailed analysis. The Alternatives Screening Technical Memorandum shall document the methods, the rationale and the results of the alternatives screening process.

TASK 6: DETAILED ANALYSES OF ALTERNATIVES AND FEASIBILITY STUDY REPORT

The detailed analysis shall be conducted by the Respondents to provide the EPA with the information needed to allow for the selection of a remedy for the Site.

6.1. Technical Requirements of Detailed Analyses

The Respondents shall conduct a detailed analysis of the remaining remedial alternatives for the Site. The detailed analysis shall include an analysis of each remedial option against each of the nine evaluation criteria set forth in 40 C.F.R. § 300.430(e)(9)(iii) and a comparative analysis of all options using the same nine criteria as a basis for comparison. The Respondents' analysis shall also include an assessment of the specific types of Institutional Controls (ICs) and Engineering Controls being considered, including an evaluation of each option against the nine evaluation criteria.

- 1) **Apply Nine Criteria and Document Analysis:** The Respondents shall apply nine evaluation criteria to the assembled Remedial Action Alternatives to ensure that the selected Remedial Action Alternative will be protective of human health and the environment; will be in compliance with, or include a waiver of, ARARs; will be cost-effective; will utilize permanent solutions and alternative treatment technologies, or resource recovery technologies, to the maximum extent practicable; and will address the statutory preference for treatment as a principal element. The evaluation criteria include: (1) overall protection of human health and the environment; (2) compliance with ARARs; (3) long-term effectiveness and permanence; (4) reduction of toxicity, mobility, or volume; (5) short-term effectiveness; (6) implementability; (7) cost; (8) State acceptance; and (9) community acceptance. Criteria 8 and 9 are considered after the RI/FS Report has been released to the general public. For each alternative, the Respondents shall provide: (1) a description of the alternative that outlines the waste management strategy involved and identifies the key ARARs associated with each alternative; and (2) a discussion of the individual criterion assessment. Since the Respondents do not have direct input on State

acceptance and community acceptance, these two criteria will be addressed by the EPA after completion of the Draft FS Report.

- 2) Alternatives Analysis for Institutional Controls and Screening: Respondents shall also evaluate institutional controls as potential remedial actions. The Alternatives Analysis for Institutional Controls and Screening shall (1) state the objectives of the Institutional Controls; (2) determine the specific types of Institutional Controls that can be used to meet the remedial action objectives; (3) investigate when the Institutional Controls need to be implemented and/or secured and how long they must be in place; (4) research, discuss and document any agreement with the proper entities (e.g., state, local government entities, local landowners, conservation organizations, Respondents) on exactly who will be responsible for securing, maintaining and enforcing the Institutional Controls.
- 3) Compare Alternatives Against Each Other and Document the Comparison of Alternatives: The Respondents shall perform a comparative analysis among the Remedial Action Alternatives That is, each alternative shall be compared against the others using the nine evaluation criteria as a basis of comparison. No alternative shall be identified by Respondents as the preferred alternative in the Feasibility Study. The EPA identifies and selects the preferred alternative.

6.2. Detailed Analyses Deliverables

The Respondents shall prepare technical memoranda summarizing the work performed and the results of each task above.

- 1) Comparative Analysis of Alternatives Technical Memorandum: The Respondents shall incorporate the EPA's comments on the Alternatives Screening Technical Memorandum in the Comparative Analysis of Alternatives Technical Memorandum.
- 2) Alternatives Analysis for Institutional Controls and Screening: The Respondents shall document the Alternatives Analysis for Institutional Controls and Screening, and submit the documentation as an appendix to the Draft Feasibility Study Report.
- 3) Feasibility Study Report: The Respondents shall prepare a Draft Feasibility Study Report for the EPA review and comment. This report, as ultimately adopted or amended by the EPA, provides a basis for remedy selection by the EPA and documents the development and analysis of Remedial Action Alternatives. The Respondents shall refer to the RI/FS Guidance for an outline of the report format and the required report content. The Respondents shall prepare a Final Feasibility Study Report which satisfactorily addresses the EPA's comments.

TASK 7: COMMUNITY INVOLVEMENT AND TECHNICAL ASSISTANCE PLAN

To the extent required by the EPA, the Respondents shall provide community involvement support to the EPA during the planning and implementation of the community involvement program. The EPA will take the lead in the planning and implementation of the program. The RPM will oversee and direct all community involvement activities performed to ensure that they are in accordance with the outline of activities contained in this document and that they fulfill the statutory requirements as defined in the

CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). Tasks for which the EPA may request support are outlined below.

- Community Involvement Work Plan Preparation
- Community Interviews
- Community Relations Plan Preparation
- Fact Sheet Preparation
- Public Meeting Assistance
- Public Notice Preparation

In addition, the Respondents may be directed by the EPA to establish a community information repository, at or near the Site, to house one copy of the administrative record. The extent of Respondents involvement in community involvement is left to the discretion of the EPA. The Respondents' community involvement responsibilities, if any, are specified in the community involvement plan. All Respondent-conducted community involvement activities will be subject to oversight by the EPA.

Upon a request from the EPA, the Respondents shall draft a Technical Assistance Plan (TAP) consistent with this SOW, related Consent Order, and relevant EPA policy and guidance. The TAP provides for administering up to \$50,000 of Respondents' funds to be used by a qualified community group to hire independent technical advisers during the work conducted pursuant to the AOC. The Respondents will submit the plan in draft for the EPA's prior written approval. If the EPA disapproves of, or requires revisions to, the TAP work plan, in whole or in part, Respondents shall amend and submit to the EPA a revised TAP work plan that is responsive to the EPA's comments, within 30 days of receiving the EPA's comments. Once approved, the Respondents will implement the TAP.

Within 15 days of the EPA's request, the Respondents shall designate an outreach coordinator to be the primary contact with the selected Community Group. The outreach coordinator also may respond to the public's inquiries and questions about the Site and/or TAP. The Respondents may hire a third party (e.g., a trustee) to act as outreach coordinator. However, any such third party shall be approved by the EPA, and it is the Respondents' burden to demonstrate that the third-party is qualified. If the Respondents opts to hire a third-party, it shall submit in writing that person's name, title, and qualifications to the EPA within 15 days of the EPA's request for a TAP.

TASK 8: PROGRESS REPORTS

8.1 Monthly Progress Reports

The Respondents shall electronically submit monthly written progress reports to the EPA with copies submitted electronically to GAEPD, concerning actions undertaken pursuant to the AOC and this SOW, beginning 30 calendar days after the effective date of the AOC, until the termination of the AOC, unless otherwise directed in writing by the RPM. Two (2) hard copies of maps and colored figures from the reports will be submitted to both EPA and GAEPD. These reports shall include, but not be limited to, a description of all significant developments during the preceding period, including the specific work that was performed and any problems that were encountered; a summary of the analytical data received during the reporting period; and the developments anticipated during the next reporting period, including

a schedule of work to be performed, anticipated problems, and actual or planned resolutions of past or anticipated problems. The monthly progress reports will summarize the field activities conducted each month; problems encountered; solutions to problems; a description of any modifications to the procedures outlined in the RI/FS Work Plan, the FSP, QAPP or Health and Safety Plan, with justifications for the modifications; and upcoming field activities.

8.2 Annual Progress Reports

The Respondents shall electronically submit Annual Progress Reports to the EPA, with electronic copies submitted to GAEPD. Two (2) hard copies of maps and colored figures from the reports will be submitted to both EPA and GAEPD. These reports shall summarize overall progress in completing the Work required by this AOC and SOW. The Annual Progress Reports are intended to be a concise summary of the progress of the Work at the Site. These reports will continue until the termination of the AOC, unless otherwise directed in writing by the EPA.

ATTACHMENT A
PARTIAL LIST OF GUIDANCE

The following list, although not comprehensive, comprises many of the regulations and guidance documents that apply to the RI/FS process:

The majority of these guidance documents, and additional applicable guidance documents, may be downloaded from the following websites:

<http://www.epa.gov/superfund/policy/remedy/sfremedy/rifs/overview.htm> (RI/FS Guidance Documents)
<http://www.epa.gov/superfund/pubs.htm> (General Superfund)
<http://clu.in.org> (Site Characterization, Monitoring and Remediation)
<http://www.epa.gov/ORD/NRMRL/Pubs> (Site Characterization and Monitoring)
http://www.epa.gov/quality/qa_docs.html#guidance (Quality Assurance)
http://www.epa.gov/oswer/riskassessment/risk_superfund.htm (Risk Assessment)
<http://www.epa.gov/superfund/programs/risk/toolthh.htm>
<http://www.epa.gov/superfund/programs/risk/tooleco.htm> (Ecological Risk Assessment)
<http://cfpub.epa.gov/ncea> (Risk Assessment - Exposure Factors/Other)
<http://www.epa.gov/nepis/srch.htm> (General Publications Clearinghouse)
<http://www.epa.gov/region4/sesd/fbqstp/> (SESD routine field sampling and measurement procedures)
http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/whatsnew.htm (risk based tables)
<http://www.epa.gov/oswer/vaporintrusion> (vapor intrusion)
<http://www.epa.gov/region4/superfund/programs/riskassessment/healthbul.html#hhrisk> (Region 4 Supplements to RAGS, Human Health Risk Assessment Bulletins)
<http://www.epa.gov/region4/superfund/programs/riskassessment/ecolbul.html> (Region 4 Supplements to RAGS, Ecological Risk Assessment Bulletins)

1. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP), March 8, 1990.
2. "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA," U.S. EPA, Office of Emergency and Remedial Response, October 1988, OSWER Directive No. 9355.3-01.
3. EPA's Environmental Data Submission Guidance (SESDGUID-106-R0, December 17, 2010 or most recent revision).
4. "Interim Guidance on Potentially Responsible Party Participation in Remedial Investigation and Feasibility Studies," U.S. EPA, Office of Waste Programs Enforcement, Appendix A to OSWER Directive No. 9355.3-01.
5. "Guidance on Oversight of Potentially Responsible Party Remedial Investigations and Feasibility Studies, Volume I" U.S. EPA, Office of Waste Programs Enforcement, July 1, 1991, OSWER Directive No. 9835.1(c).
6. "Guidance on Oversight of Potentially Responsible Party Remedial Investigations and Feasibility Studies, Volume II" U.S. EPA, Office of Waste Programs Enforcement, July 1, 1991, OSWER Directive No. 9835.1(d).
7. "Field Analytical and Site Characterization Technologies Summary of Applications," U.S. EPA, EPA-542-F-97-024, November 1997.

8. "Field Sampling and Analysis Technology Matrix and Reference Guide," U.S. EPA, EPA-542-F-98-013, July 1998.
9. "Guidance for the Data Quality Objectives Process (QA-G-4)," (EPA/600/R-96/055, August 2000).
10. "Guidance for the Data Quality Objectives Process for Hazardous Waste Sites (QA/G-4HW)," (EPA/600/R-00/007, January 2000).
11. "Guidance for the Preparation of Standard Operating Procedures (QA-G-6)," (EPA/240/B-01/004, March 2001).
12. "EPA Requirements for Quality Management Plans (QA/R-2)," (EPA/240/B-01/002, March 2001).
13. "EPA Requirements for Quality Assurance Project Plans (QA/R-5)" (EPA/240/B-01/003, March 2001).
14. "EPA Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA 240/R-02/009, December 2002).
15. "User's Guide to the EPA Contract Laboratory," U.S. EPA, Sample Management Office, January 1991, OSWER Directive No. 9240.0-01D.
16. "CERCLA Compliance with Other Laws Manual," Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, August 1988 (draft), OSWER Directive No. 9234.1-01 and -02.
17. "Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites," U.S. EPA, Office of Emergency and Remedial Response, (draft), OSWER Directive No. 9283.1-2.
18. "Draft Guidance on Superfund Decision Documents," U.S. EPA, Office of Emergency and Remedial Response, March 1988, OSWER Directive No. 9355.-02.
19. "Interim Final Risk Assessment Guidance for Superfund - Volume I - Human Health Evaluation Manual, Part A," U.S. EPA, Office of Emergency and Remedial Response, EPA/540/1-89/002A, December 1989, OSWER Directive No. 9285.7-01a.
20. "Interim Final Risk Assessment Guidance for Superfund - Volume I - Human Health Evaluation Manual, Part B," U.S. EPA, Office of Emergency and Remedial Response, EPA/540/1-89/002B, OSWER Directive No. 9285.7 -01b.
21. "Interim Final Risk Assessment Guidance for Superfund - Volume I - Human Health Evaluation Manual, Part C," U.S. EPA, Office of Emergency and Remedial Response, EPA/540/1-89/002C, OSWER Directive No. 9285.7-01c.
22. "Interim Risk Assessment Guidance for Superfund: Volume 1 - Human Health Evaluation Manual, Part D, Standardizing Planning, Reporting, and Review of Superfund Risk Assessments," EPA 540-R-97-033, January 1998.
23. "Ecological Risk Assessment Guidance for Superfund: Process for Designing & Conducting Ecological Risk Assessments," U.S. EPA, OSWER Directive, No. 9285.7-25, February 1997.
24. "Superfund Exposure Assessment Manual," U.S. EPA, Office of Emergency and Remedial Response, EPA/540/1-88/001, April 1988, OSWER Directive No. 9285.5-1.
25. "Guidance for Data Useability in Risk Assessment (Part A)," U.S. EPA, Office of Emergency and Remedial Response, April 1992, OSWER Publication No. 9285.7-09A
26. "Performance of Risk Assessments in Remedial Investigation/Feasibility Studies (RI/FSs) Conducted by Potentially Responsible Parties (PRPs)," August 28, 1990, OSWER Directive No.9835.15.

27. "Supplemental Guidance on Performing Risk Assessments in Remedial Investigation Feasibility Studies (RI/FSSs) Conducted by Potentially Responsible Parties (PRPs)," July 2, 1991, OSWER Directive No. 9835.15(a).
28. "Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions," April 22, 1991, OSWER Directive No. 9355.0-30.
29. "Health and Safety Requirements of Employed in Field Activities," U.S. EPA, Office of Emergency and Remedial Response, July 12, 1981, EPA Order No. 1440.2.
30. OSHA Regulations in 29 CFR 1910.120 (Federal Register 45654, December 19, 1986).
31. "Interim Guidance on Administrative Records for Selection of CERCLA Response Actions," U.S. EPA, Office of Waste Programs Enforcement, March 1989, OSWER Directive No. 9833.3A.
32. "Superfund Community Involvement Handbook," U.S. EPA, Office of Solid Waste and Emergency Response, April 2005, EPA 540-K-05-003.
33. "USEPA Contract Laboratory Program Statement of Work for Organics Analysis", EPA, Office of Emergency and Remedial Response, February 1988.
34. "USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis", U.S. EPA, Office of Emergency and Remedial Response, July 1988.
35. "Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)," U.S. EPA, EPA530-F-02-052, November 2002.
36. "Reuse Assessments: A Tool To Implement The Superfund Land Use Directive, OSWER 9355.7-06P, June 4, 2001.
37. "Considering Reasonably Anticipated Future Land Use and Reducing Barriers to Reuse at EPA-lead Superfund Remedial Sites," OSWER Directive 9355.7-19, dated March 17, 2010
38. PTSM directive
39. Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletins. EPA Region 4, originally published November 1995, Website version last updated May 2000 (currently under revision),
<http://www.epa.gov/region4/superfund/programs/riskassess/healthbul.html#hhrisk>
40. Supplemental Guidance to RAGS: Region 4 Bulletins, Ecological Risk Assessment Bulletins. EPA Region 4, originally published November 1995, Website version last updated November 30, 2001 (currently under revision),
<http://www.epa.gov/region4/superfund/programs/riskassess/ecolbul.html>
41. Risk Assessment Guidance for Superfund, Volume II-Environmental Evaluation Manual, Interim Final, March 1989, EPA/540/1-89/001.

ATTACHMENT B

SUMMARY OF THE MAJOR DELIVERABLES FOR THE REMEDIAL INVESTIGATION AND FEASIBILITY STUDY AT THE ARMSTRONG WORLD INDUSTRIES SUPERFUND SITE, OPERABLE UNIT TWO

<u>TASK</u>	<u>DELIVERABLE</u>
TASK 1	SCOPING and PLANNING <ul style="list-style-type: none">- RI/FS Work Plan- Field Sampling and Analysis Plan- Quality Assurance Project Plan- Site Health and Safety Plan
TASK 2	SITE CHARACTERIZATION <ul style="list-style-type: none">- Site Characterization Summary- Remedial Investigation (RI) Report- Memorandum: the current and reasonably anticipated future land uses
TASK 3	BASELINE RISK ASSESSMENT <ul style="list-style-type: none">- Technical Memorandum #1: Contaminant Identification and COPCs- Technical Memorandum #2: Exposure Assessment- Human Health Baseline Risk Assessment Report- Technical Memorandum #3: Screening Level Ecological Risk Assessment- Baseline Ecological Risk Assessment Problem Formulation (step 3) (if required)- Study Design and DQO Process (step 4) (if required)- Field Verification of Sampling Design (step 5) (if required)- Ecological Risk Assessment report (step 7) (if required)
TASK 4	TREATABILITY STUDIES <ul style="list-style-type: none">- Technical Memorandum Identifying Candidate Technologies- Treatability Study Work Plan (or amendment to original Work Plan)- Treatability Study Evaluation Report
TASK 5	DEVELOP AND SCREEN REMEDIAL ACTION ALTERNATIVES <ul style="list-style-type: none">- Technical Memorandum: Revised Remedial Action Objectives- Technical Memorandum: Remedial Technologies, Alternatives and Screening

TASK 6 DETAILED ANALYSES OF REMEDIAL ACTION ALTERNATIVES

- Technical Memorandum: Individual and Comparative Analysis
- Feasibility Study (FS) Report

TASK 7 COMMUNITY INVOLVEMENT AND TECHNICAL ASSISTANCE PLAN

- Technical Assistance Plan, if requested.

TASK 8 PROGRESS REPORTS

- Monthly Progress Reports
- Annual Progress Reports

Note: Two copies of each deliverable, plus one electronic copy of each deliverable, will be submitted to EPA and GAEPD by the Respondents. Also, see the Administrative Order on Consent for additional reporting requirements and further instructions on submittal and dispositions of deliverables.

ATTACHMENT C

GENERAL SCHEDULE FOR MAJOR DELIVERABLES RI/FS AND RISK ASSESSMENT

DELIVERABLE/ACTIVITY	DUE DATE
TASK 1 RI/FS Planning Documents, including Work Plan, Field Sampling Plan, Quality Assurance Project Plan and Health and Safety Plan	<ul style="list-style-type: none">• Draft RI/FS Planning documents due 180 days after the effective date of the AOC.• Final RI/FS Planning Documents due 60 days after EPA notification of deficiencies pursuant to Section II of the SOW and Section X of the AOC.
TASK 2 Initiate Site Characterization Field Work	Within 60 days of EPA approval of RI Work Plan.
TASK 2 Site Characterization Summary Report	60 days after receipt of all sample analysis results from laboratory.
TASK 2 RI Report	<ul style="list-style-type: none">• Draft RI Report due 180 days after collection of the last field sample required in the Final Work Plan/Field Sampling Plan.• Final RI Report due 60 days after receipt of EPA's notification of deficiencies pursuant to Section II of this SOW and Section X of the AOC.
TASK 3 Risk Assessment Technical Memorandum #1: Identification of COPCs, #2: Exposure Assessments, #3: Screening Level Ecological Risk Assessment	Concurrent with the Site Characterization Summary Report

DELIVERABLE/ACTIVITY	DUE DATE
TASK 3 Ecological Baseline Risk Assessment Report <ul style="list-style-type: none"> • Baseline Ecological Risk Assessment Problem Formulation (step 3) (if required); • Study Design and DQO Process (step 4) (if required); • Field Verification of Sampling Design (step 5) (if required); 	If required, <ul style="list-style-type: none"> • Draft Ecological Risk Assessment Report (documenting Steps 3-7 of the ecological risk assessment process) is due concurrent with the draft RI Report. • Final documents due 60 days after receipt of EPA's notification of direction to modify pursuant to Section X of the AOC.
TASK 3 Human Health Baseline Risk Assessment Report	<ul style="list-style-type: none"> • Draft is due concurrent with the draft RI Report. • Final documents due 60 days after receipt of EPA's notification of direction to modify pursuant to Section X of the AOC.
TASK 4 Candidate Technologies and Testing Needs Technical Memorandum	Due 60 days after the effective date of the Final RI Report
TASK 4 Treatability Study Work Plan and SAP or Amendments to the Original RI/FS Work Plan, FSP and/or QAPP. Treatability Study Health and Safety Plan or Amendment to the Original Health and Safety Plan	<ul style="list-style-type: none"> • Draft due within 60 days of request by EPA. • Final documents due 60 days after receipt of EPA's notification of direction to modify pursuant to Section X of the AOC.
TASK 4 Treatability Study Evaluation Report	As required by the approved Treatability Study Work Plan/Field Sampling Plan.
TASK 5 Remedial Action Objectives Technical Memorandum	With the draft RI Report (Task 2).
TASK 5 Alternatives Screening Technical Memorandum	90 days after receipt of EPA's comments on the Remedial Action Objectives Technical Memorandum.
TASK 6 Comparative Analysis of Alternatives Technical Memorandum	60 days after receipt of EPA's comments on the Alternatives Screening Technical Memorandum.

DELIVERABLE/ACTIVITY	DUE DATE
TASK 6 Feasibility Study Report	<ul style="list-style-type: none"> • Draft FS Report due 90 calendar days after receipt of EPA's comments on the Comparative Analysis of Alternatives Technical Memorandum. • Final FS Report due 60 days after receipt of EPA's notification of deficiency on the draft FS Report pursuant to Section II of the SOW and Section X of the AOC.
TASK 7 Technical Assistance Plan (TAP)	<ul style="list-style-type: none"> • TAP due 60 days after request by EPA. • Final TAP due 30 days after receipt of U.S. EPA's notification of deficiencies pursuant to Section II of the SOW and Section X of the AOC.
TASK 7 Quarterly Progress Reports on Implementation of the TAP (if TAP is requested)	15 days after the end of each calendar year quarter; first report due in the first full calendar year quarter after the date the TAP is requested by EPA.
TASK 8 Monthly Progress Reports	On the 15 th day of each month or the first business day after the 15 th of the month commencing 30 days after the effective date of the AOC until termination of the AOC.
TASK 8 Annual Progress Reports	Due one year after the effective date of the AOC and every year thereafter until termination of the AOC.
Miscellaneous Documents	In accordance with the submittal date provided by RPM.

APPENDIX B

Site Map



APPENDIX C

Respondents

1. Armstrong World Industries
2. Macon-Bibb County
3. Macon Water Authority
4. Honeywell International Inc.
5. Reynolds Metals Company, LLC
6. The Unimax Corp.